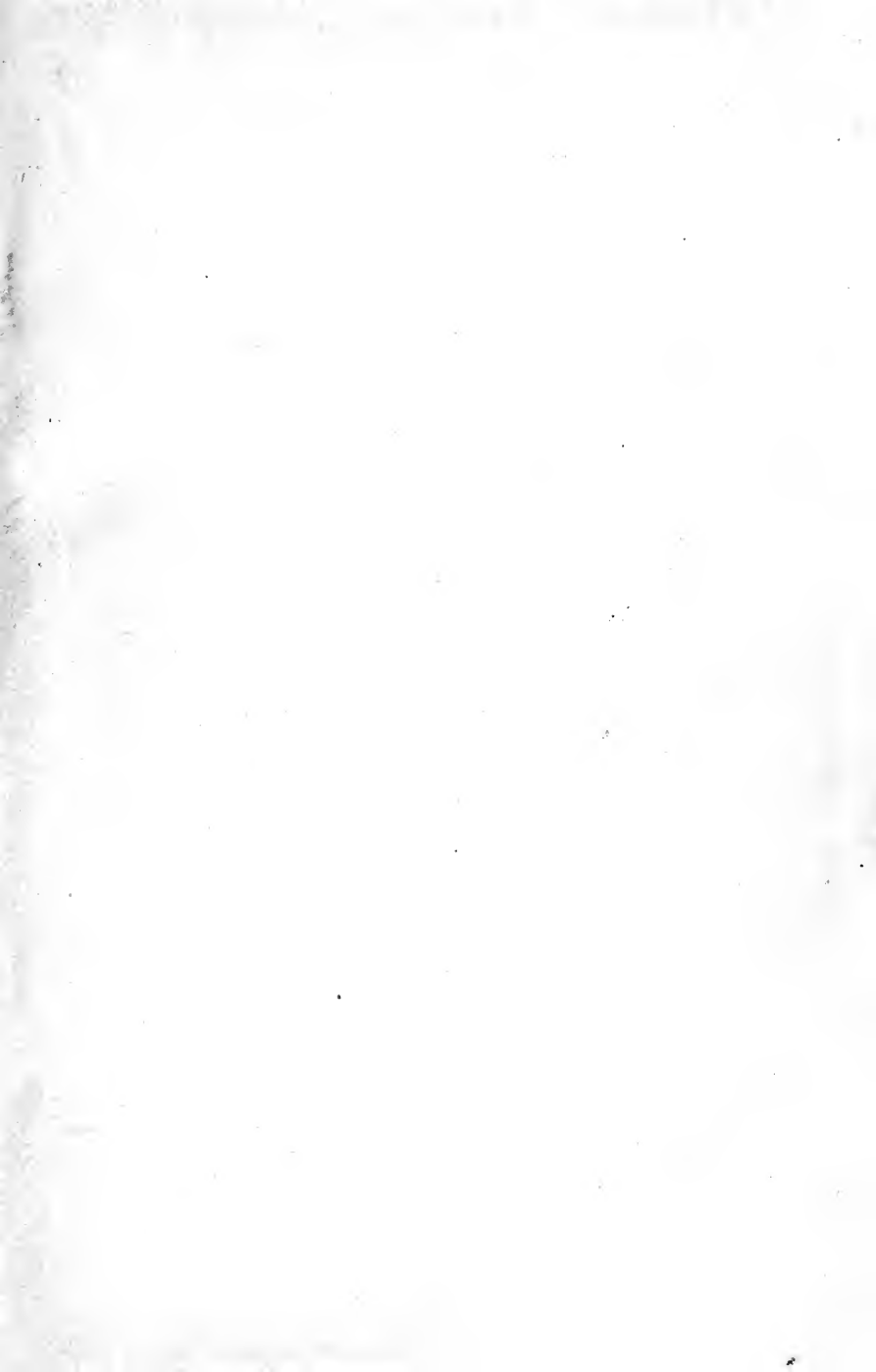


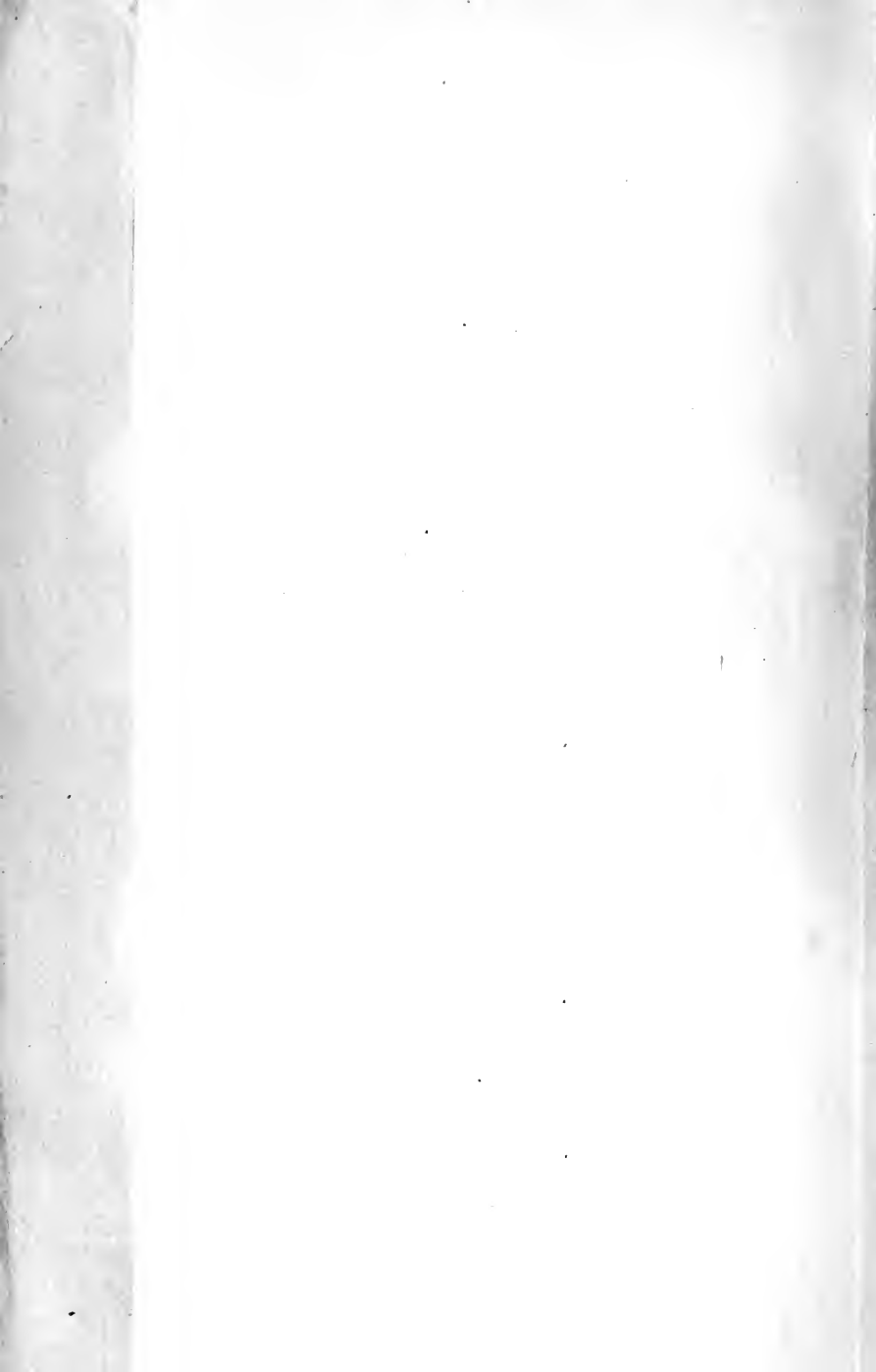
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PRACTICAL PSYCHOLOGY FOR BUSINESS EXECUTIVES

Compiled by

LIONEL D. EDIE

Associate Professor of History and Politics
Division of Current Industrial Problems
Colgate University

Author of "Current Social and Industrial Problems"
and of "Principles of the New Economics"

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PREFACE

This collection of material has been made with the purpose of bringing together in readable form some of the important and useful writings on the application of psychology to industry. The last decade has seen the growth of a body of psychological ideas of great importance in economic life. Many authorities have contributed the benefits of their experiments and discoveries to a wide and scattered literature in the field, and it is hoped that this symposium may aid in making business men acquainted with the more practical parts of this literature.

A bibliography has been prepared, its divisions corresponding with the chapters of the book. For the most part, the publications which have been the sources of the quoted extracts used in this volume, have not been relisted in the bibliography.

I have been greatly aided by Mr. Jesse C. Neff in the collection of material, the selection of titles, and the entire workmanship of the book. His judgment and discrimination have played a most helpful part in every phase of the undertaking. Mrs. Neff's cooperation in the preparation of the manuscript has been highly gratifying, and it is desired to extend here a full appreciation of her interest and assistance.

The sources and authorship of material are recognized by footnotes accompanying each individual article.

LIONEL D. EDIE.

February 28, 1922

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FOREWORD

The modern executive is keenly interested in the baffling variations in human conduct that confront him from day to day, but unless he is familiar with the work and literature of our best men in this field he is apt to become the prey of cunning charlatans and human nature fakirs who are out to sell all kinds of patent medicine schemes for the cure of our labor problems and who make use of phrenology, astrology, in fact everything that can be dragged in to make up a "new science," a "new psychology" that will "sell" its victims.

Experience in handling men is a great asset to the executive but that experience is not enough. The wide-awake executive does not allow himself to be dazzled by the selling talk of character analysts and the like; he weighs everything he reads or hears carefully, he proceeds cautiously, and he avoids generalizations with reference to human conduct because he knows that no two individuals are alike, that we have only begun the study of psychology as it affects industrial relations. And so all of our observations must necessarily be tentative; we must feel our way carefully.

Bearing this in mind, a notable service has been done by Professor Edie in preparing the present book for executives and those interested in understanding the motives and behavior of men who work under the direction of others. This book presents the best thought on the subject: its substance is thoroughly practical, its viewpoint sane and helpful; the treatment is exhaustive. Professor Edie has used fine discrimination in the selection of his material which comes from many sources, all of them authoritative.

May 23, 1922.

DANIEL BLOOMFIELD.



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INTRODUCTION

Any important policy of economic advance meets with three types of attitudes among business men: First, there is the type which tries out the new policy and succeeds. Second, there is the type which tries it out and fails. Third, there is the type which refuses to try it out at all.

The first group are in the truest sense of the word pioneers in the business world. Their experimenting and testing of new economic principles and methods is the great influence in keeping the economic system from becoming stagnant. They deserve credit for taking the risks that go with new and untried programs, and for discovering the practical technique by which new ideas and principles can be made workable for business. This group have amply demonstrated the practicability and the soundness of the fundamental principles of modern psychology as applied to business problems.

The second group accompany any forward movement. By failing to grasp the spirit of the movement, or by failing to apply the principles by the proper technology, they fail naturally to secure the expected results. The feature of their failure which is most regrettable is that the conclusion drawn by themselves and by many onlookers is that the cause of failure was in the system. In reality, the failure was in themselves,—in their not understanding the principles and technique requisite for success. In spite of this real cause of failure, the seeming cause all too often is the one which attracts attention. Those who have tried to apply psychology to business and have failed take it for granted that their failure ought to teach everyone the lesson that psychology is a delusion and a snare. Such a conclusion is exploded by those who take the sober second thought to observe those who have tried and succeeded. The practical and the truthful conclusion to be drawn from such failures is that no one should attempt lightly to establish his industrial relations upon a sound psychological basis, with the hope that no matter how much fumbling and botching may be gone through with, nevertheless some legerdemain will carry

him through to success. Practical psychology is practical only when and where business men take the pains to understand its principles, to apply it honestly and sincerely, and to work out the technique of its application intelligently and carefully.

The third group abound with skepticism toward the new project, mainly because it is new. Their skepticism is intensified by the business men here and there who try out the new movement and fail. The most liberal-minded of this group are honestly open to conviction, and genuinely want to be convinced. But they have seen fads come and go, and take a cautious attitude toward all new methods of management. Their innate conservatism can gradually be overcome by the examples of successful trial of the new movement as they appear from time to time. The least liberal-minded of this group are the adamant reactionaries who openly scoff at the foolhardiness of any departure from the worn and beaten paths of business as usual.

In viewing the various attitudes held by business men toward the value of psychology for business, it is illuminating, therefore, to bear in mind these three distinct types of business executives.

Psychology becomes "practical" for business executives in so far as its principles square with inevitable economic laws and its technique of application proves definitely workable. Practicability consists of principles and a technology for applying principles. The selections of this volume have been made with the purpose of fulfilling both of these demands. There is a vast field of literature in theoretical psychology, and the bulk of industrial psychology is derived from the theoretical literature. However, it would be out of place to fill this volume with the treatises on abstract psychological speculation, or with the academic investigations in pure science along psychological lines. The purpose has been to glean from one source and another enough of the theory to give some conception of fundamental, scientific principles. On the other hand, the purpose has been to balance this material with selections that treat of methods, practices, and technique. The two combined are offered as a practical approach to the study of the possibilities of psychology in industry by managers and executives. The successes of pioneer business men in applying psychology to industry have been numerous enough and thorough enough so that the rank

and file of business executives can afford to take seriously the demonstrated contribution which psychology is able to make to the tasks of modern management. \

LIONEL D. EDIE.

1

I. THE PSYCHOLOGICAL BASIS OF INDUSTRIAL RELATIONS

THE POSSIBILITIES CONTAINED IN THE PSYCHOLOGICAL APPROACH¹

During the nineteenth century many advances were made in our conception of the material world and in our practice of dealing with its various factors. The twentieth century is characterized by an appreciation of the personnel problem, by the possession of the behavioristic point of view in psychology, and by the presence of numerous trained experts devoting their energy to the development of the concepts and practice of personnel. . .

The importance of these changes is very great, both for the development of the science of psychology and for the welfare of the human race. It has been estimated that during the nineteenth century the power of the human race to produce food, clothing and shelter was doubled by the application of increased knowledge of the material elements of the universe. All the significant advances in knowledge of the material world were brought about by possibly a few thousand progressive minds devoted to that study.

It is quite probable that the productive power of the human race is being doubled again during the present century. The benefits of this advance will be divided between better adjustments of the material world to the needs of man, and the better adjustments of man to man. Such an increase in the efficiency of the race will probably be due to the advance in our knowledge of personnel rather than to further increase in our knowledge of the material universe. If a few thousand men in their study of the material world served the science and the race so effectively, those of us who are engaged in the study of personnel

¹ Walter Dill Scott, President of the Scott Company, President of the American Psychological Association. Annual address. Psychological Review. Vol. 27. 1920. p. 82-94.

may get a glimpse of the responsibility and the opportunity that is ours.

THE DRIVING POWER OF HUMAN INSTINCTS¹

We may say, then, that directly or indirectly the instincts are the prime movers of all human activity; by the conative or impulsive force of some instinct (or of some habit derived from an instinct), every train of thought, however cold and passionless it may seem, is borne along toward its end, and every bodily activity is initiated and sustained. The instinctive impulses determine the ends of all activities and supply the driving power by which all mental activities are sustained; and all the complex intellectual apparatus of the most highly developed mind is but a means toward these ends, is but the instrument by which these impulses seek their satisfactions, while pleasure and pain do but serve to guide them in their choice of the means.

Take away these instinctive dispositions with their powerful impulses, and the organism would become incapable of activity of any kind; it would lie inert and motionless like a wonderful clockwork whose main-spring had been removed or a steam-engine whose fires had been drawn. These impulses are the mental forces that maintain and shape all the life of individuals and societies, and in them we are confronted with the central mystery of life and mind and will.

SOCIETY FOUNDED ON INSTINCTS²

The integrating factors in all animal societies are instincts rather than intelligence. That this is true of ants, bees, and wasps, of fishes, birds, wolves, and sheep no one will question. That it is equally true of human society is plainly apparent to any one who studies primitive man or who analyzes the behavior of even the highest races. Even in man, instinct is more universal

¹ William McDougall. *Social Psychology*. 13th ed. p. 45-6. John W. Luce & Co. Boston. 1918.

² Edwin Grant Conklin. *The direction of Human Evolution; Evolution and Democracy*. p. 90-4. Charles Scribner's Sons. New York 1921.

and more powerful than reason; indeed, reason plays a relatively small part in the lives and activities of most men. The contrary opinion is due to our inveterate habit of acting instinctively and then attempting to explain to ourselves or to others the reason for the act. Indeed, mankind, as a whole, has but recently begun to emerge from a life of instinct to one of intelligence and reason. Some races and some individuals have gone farther in this direction than others, but with the great mass of mankind instinct is still the guide of life.

Descartes begins his famous Discourse on Method with these words: "Good sense or reason is, of all things among men, the most equally distributed." No modern philosopher or scientist would agree to this; on the contrary, he would say: "Instinct is, of all psychical things among men, the most equally distributed." Instinct and not reason is the source and ultimate cause of human society as well as of most human behavior.

The principal instincts of all animals are those which concern safety, food, and reproduction; the most important social instincts have to do with the defense, welfare, and perpetuity of the group. In addition to these general instincts the following more special ones have served to bind the higher mammals together in societies:

1. The instinct of service, especially between members of the same family or social group.
2. The fear of isolation, or disapproval, and the desire for fellowship, or sympathy.
3. The tendency to follow trusted leaders, but not to depart too far from precedents.

These are the integrating, coordinating, harmonizing bonds which unite men in societies. They are deep-seated instincts not easily overcome. The presence and power of these instincts in practically all peoples of the earth has been demonstrated in a most remarkable manner during the Great War. It is reassuring to find that the integrative instincts on which society is founded have not disappeared, and while these foundations remain let no one despair of the future of society.

On the other hand, among the higher mammals and especially among men there are disintegrative instincts or desires which tend to disrupt societies or at least to create disharmony. Among these are:

1. The desire for individual freedom, even when it conflicts with the welfare of society.

2. The tendency to limit social cooperation to groups or classes based upon family, racial, national, temperamental, environmental, industrial, intellectual, or religious homogeneity.

Such disruptive instincts are not unknown in animal societies. Ant-colonies often wage relentless war upon other colonies, even though they be of the same species. Under certain circumstances bees become ruthless robbers and marauders, waging a war of extermination upon weaker or defenseless colonies, and even upon other species of animals; indeed the robber instinct of bees seems to be a kind of frenzy, or madness, which is possibly the result of fear and the defensive instinct. In all animals the class instinct serves to bind together more firmly the members of the same class or colony, while at the same time it widens the gaps between different classes and colonies. Indeed, it may be said that in animal societies there are practically no bonds between different groups or colonies. These class instincts are very evident among men. Fortunately they are opposed by the harmonizing and unifying instincts, and most of all intelligence and reason.

The incompleteness of integration, cooperation, and harmony in human society is due to the fact that imperfect intelligence and freedom have come in to interfere with instinct. Disharmony in ourselves and in society is the price we pay for personal intelligence and freedom. The more intelligence one has the greater is his freedom from purely instinctive responses, but man is never wholly free from the influences of instinct. The personal freedom which endangers human cooperation opens at the same time a path of progress along rational lines. In our individual behavior and in our social activities we now seek the ideal harmony of the hive, but on the higher plane of intelligence, freedom, and ethics.

The past evolution of man has occurred almost entirely without conscious human guidance; but with the appearance of intellect and the capacity of profiting by experience a new and great opportunity and responsibility has been given man of directing rationally and ethically his future evolution. More than anything else, that which distinguishes human society from that of other animals is just this ability—incomplete though it is—to control instincts and emotions by intelligence and reason.

Those who maintain that racial, national, and class antagonisms are inevitable because they are instinctive, and that wars can never cease because man is by nature a fighting animal, really deny that mankind can ever learn by experience; they look backward to the instinctive origins of society and not forward to its rational organization. We shall never cease to have instincts, but, unless they are balanced and controlled by reason, human society will revert to the level of the pack or herd or hive. The foundations of human society are laid in gregarious instincts, but upon these foundations human intelligence has erected that enormous structure which we call civilization.

GUIDANCE OF THE PRIMARY HUMAN FORCES¹

I have been at some pains to make it clear that the instinctive tendencies of man must often be supplemented, redirected and even reversed, and that, in the ordinary sense of the words, original nature is imperfect and untrustworthy. But in a certain important sense nature is right.

There is a warfare of man's ideals with his original tendencies, but his ideals themselves came at some time from original yearnings in some man. Learning has to remake unlearned tendencies for the better, but the capacity to learn, too, is a part of his nature. Intelligence and reason are fit rulers of man's instincts just because they are of the same flesh and blood. They are not foreign conquerors, imposing a law that is better because it comes down from above. They are sons of the soil, as indigenous as hunger and thirst, chosen to rule because their laws mean the best harmony of all the instincts. The native impulses and cravings of man have to be tamed and enlightened by the customs, arts and sciences of civilized life, but every item of these arts and sciences was first created by forces within man's own nature. Instincts may be trusted to form desirable habits only under a strong social pressure whereby the wants of one are accommodated to the wants of all, but the most elaborate and artificial moral training which a social group prescribes is still ultimately an expression of man's nature. The

¹E. L. Thorndike. *The Original Nature of Man*. In *Educational Psychology*. Vol. I. p. 310-12. Teachers College, Columbia University, 1913-1914.

springs of ideals and of work in their service are surely not in the environment of rocks, rivers, animals and plants. Man's nature is right in at least the sense that it, not the world outside of it, is the source of whatever goods man has learned to esteem.

The impersonal wants, the cravings for truth, beauty and justice, the zeal for competence in workmanship, and the spirit of good-will toward men which are the highest objects of life for man seem far removed from his original proclivities. They are remote in the sense that the forces in their favor have to work diligently and ingeniously in order to make them even partial aims for even a minority of men. But, in a deeper sense, they reside within man himself; and, apart from supernatural aids, the forces in their favor are simply all the good in all men.

The original nature of man, as we have seen, has its source far back of reason and morality in the interplay of brute forces; it grows up as an agency to keep men, and especially certain neurones within men's bodies, alive; it is physiologically determined by the character of the synaptic bonds and degrees of readiness to act of these neurones; parts of it are again and again in rebellion against the higher life that the acquired wisdom of man prescribes. But it has evolved reason and morality from brute force; amongst the neurones whose life it serves are neurones whose life means, if a certain social environment is provided, loving children, being just to all men, seeking the truth, and every other activity that man honors, the wisdom that criticizes it is its own product; the higher life is the choice of its better elements: for whatever aberrations and degradations it imposes on man, its own virtues are the preventive and cure: and to it will be due whatever happiness, power and dignity man attains.

"Human nature, then, has for its core the substance of nature at large, and is one of its more complex formations. Its determination is progressive. It varies indefinitely in its historic manifestations and fades into what, as a matter of natural history, might no longer be termed human. At each moment it has its fixed and determined entelechy, the ideal of that being's life, based on his instincts, summed up in his character, brought to a focus in his reflection, and shared by all who have attained or may inherit his organization. His perceptive and reasoning

faculties are parts of human nature, as embodied in him; all objects of belief or desire, with all standards of justice and duty which he can possibly acknowledge are transcripts of it, conditioned by it, and justifiable only as expressions of its inherent tendencies."—Santayana, *Life of Reason*. These inherent tendencies, too, bear the impetus and means to their own improvement. The apostles and soldiers of the ideal in whom service for truth and justice has become the law of life need not despair of human nature, nor pray for a miracle to purge man of his baser elements. They are the sufficient miracle: their lives are the proof that human nature itself can change itself for the better—that the human species can teach itself to think for truth alone and to act for the good of all men.

SCOPE OF PSYCHOLOGY IN INDUSTRY ¹

All great movements of history and pre-history have been the products of unrest and man's struggle to make or find an environment that better suits his nature and his needs. It took the world a long time to learn that religion was made for man, and not man for religion. More recently we have been learning that the school was made for the child, and not the child for the school. Today we are in the midst of the same Copernican revolution in industry and are beginning to realize that it was made for the better development of man, and not conversely. ✓
[It, too, can never be stable until it fits human nature and needs.]

But let me say at the outset that the nascent but inevitable advent of democracy into industry is not to be attained by any bolshevik program of confiscation or nationalization of capital; nor by any form of government socialism, or by the French or any form of syndicalism; nor by any modernization of the mediæval guilds; nor by any development yet in sight of the efficiency system, which has so far contributed almost as much to the discontent of labor as it has to the effectiveness of the organization; nor even by the full program of the Whitley reports. [Permanent and settled industrial peace and good-will can only be found in a full and unreserved cooperation between ✓

¹ G. Stanley Hall. Address before Worcester Polytechnic Institute, June 10, 1920. Reprinted from *Pedagogical Seminary*. Vol. 27. 1920. p. 281-91, 293.

capital and labor, with some complete scheme of joint control and profit-sharing, involving more knowledge by the laborer of the business as a whole and more loyalty to it. This alone can bring harmony, avoid the excessive waste of friction, ill-will, soldiering on the job, labor turn-overs, strikes—of which an official report a few months ago told us there were three hundred sixty-five, or one for every day of the year, on at that time in this country—and all the other wastage of energy from unemployment to sabotage. All these disorders which are so ominous for the business and economic future of this country and its supremacy in the markets of the world are, in a sense, of psychic origin, and the cure must be sought by a better knowledge and a wiser regimentation of the mind of labor. Δ √

Can we ever hope to accomplish the colossal engineering with the forces of Mansoul which will bring accord where there is now discord utterly without precedent? I think we see the direction and some of the first steps toward this goal.

But before designating these, let me first remind you that psychology has, almost within a decade, made a great discovery which is very much in point here, viz., that of the unconscious state of man's nature. The field of consciousness, which used to be our muse, is far too narrow, so that man very rarely knows what he really wants or what are the causes of his troubles. Consciousness is like the one-ninth of the iceberg that is above the water, once thought to be guided by the winds while in fact the impelling force is the currents of the denser medium in which the other eight-ninths are submerged. How often we think we are doing this or that by this or that means, when we realize later in fact, as history does for mankind, that very different goals were really sought. Thus the mind as we knew it before is like a port of entry and departure for a vast hinterland, or like a clearing-house. Thus with all social and political movements, as well as with industry, we have to look under the threshold of the mind for the real causes. In the era of the unconscious we are now doing that, as never before, in every field of thought. It is a little as if the individual and the race had found a new and larger soul, so that the past, present and future require reinterpretation.

In view of this let us enumerate a few of the deeper primal needs of man on which his tranquillity and effectiveness depend, quite as often and perhaps more unconsciously than consciously,

and failure to satisfy which makes for unrest and sometimes revolution.

1. The first of these is the homely need of sufficient and fit food and drink. Nutrition is the basis of life. The first use of every sense, all of which are located near the entrance of the alimentary canal, was as a food-finder or tester. A large part of the intelligence of animals which we marvel at as instinct is directly developed by and from the food quest. The voluminous studies of the Pavlov school show us that anything that comes to be associated with food for the animal or for the human infant becomes an organ of apperception. All migrations of animals and also of men have always been from areas of scarcity to those of more adequate food supply. Many studies show, too, the effects of sub- or mal-nutrition in children. The under-nourished are far more fatigable; they have less power to resist infectious diseases and to recover from wounds, injuries or illness; they are more likely to be arrested before the later, higher stages of physical and mental maturity are attained; and they are far more nervous and irritable. There is a marked correlation in children between sub-nutrition and runaways, truancy and theft, which often begins with the theft of edibles. Very slight nutritive defects are often summated for months and years, as, e.g., a slight insufficiency of salt, long continued, causes flocks of animals and tribes of men to trek till this nutritive deficit is compensated for. Who can doubt that the general recent food shortage, especially in Central Europe, has much to do with the general unrest there, or that taking away the tippie to which the workman was long used is another contributing, if unconscious, factor in every kind of discontent, for the new nutritive balance that prohibition requires always causes men to make more demands upon the home table or dinner pail and thus brings added responsibilities upon the housewife. The working man is, in some respects, peculiarly dependent upon his dietary, and the lank and hungry are pre-disposed to listen to radicals.

The many researches in this field show that it is the early stages of a long fast that cause most disquiet, and also that a stated reduction of food to a half or quarter of the normal, while it sustains life indefinitely, is vastly more disquieting and painful than complete abstinence. When from food insufficiency the body begins to draw upon its own reserves and consume

itself, taxing as it does the various organs and functions in a rather definite scale, some of them losing a tenfold larger percentage than others, not only efficiency but character undergo certain degenerative changes, and there is a diffused anxiety which suggestion may cause to focus on almost any object in the environment. Thus the underfed man can not only do less work and does it with more friction, like an engine only partially fueled and oiled, but he becomes more or less combustible at the touch of any kind of agitator. The dread of insufficient food in the near future is another grain of sand in the machine. Thus, in time, we are realizing as never before what a dangerous factor in politics, society, or industry, protracted and prolonged sub- or mal-nutrition may come to be. Napoleon said the greatest reinforcer of courage in the soldier was to be able to "fight on a full belly," and the morale of labor of every kind rests no less squarely upon the basis of metabolism. So our great industrial army, which works on its belly, needs a new Hooverism, which science and many social agencies are now, at least in part, prepared to supply.

If the daily ration of food or nutritive values throughout this country were cut to one-half or one-third, as for the bourgeoisie in bolshevik Russia, or even to one-fourth of the normal need, we should live indefinitely and even "carry on" after a fashion; but efficiency would gradually sink in nearly the same proportion; our national disposition, buoyant and optimistic, would sag; accidents would multiply; our mores and morale would decline; and the growing dis-ease would start or augment every tendency in the direction of revolution and even anarchy. Miss Gamble tells young women the best way to manage a husband is to keep him well-fed and never allow him to get thirsty. No matter what policies or treaties nations adopt, the world can never hope for assured and lasting peace as long as its food supply is insufficient and insecure.

2. The second basal need of man is wife and children. This is the racial as hunger is the individual factor in the mental hygiene of industry. It roots in and irradiates from the sex urge, from which evolve all the secondary sex qualities of mind and body which make the family and the home, and which is sublimated in the higher forms of culture, social life and religion. Statistics show that married men are more conservative, less prone to rove, have more incentive to earn, save and look ahead.

But they need a larger wage, and if their loved ones suffer privations, their exasperation at hard conditions is more intense and perhaps desperate. These normal domestic and family instincts, if thwarted and repressed, sooner or later find vent in subtle mental distempers which psychiatry is just beginning to understand, or else in social or industrial revolt, the real cause of which is also deeper and other than we have hitherto realized. Studies of the I. W. W. show how many of its members have known or have thrown off family ties, and one writer estimates that in the last ten years there have been fifty thousand clinical cases which show lives wrecked or gravely jeopardized by the perversions of the *vita sexualis* in the new and larger light in which this is now interpreted. The workman loves his wife, children and home as much as, and some would have us believe more than, the millionaire. He feels every pang and slight as acutely, he is no less solicitous for their present well-being and future career, and is probably more ready to make sacrifices for them. The wifeless, childless, homeless man is not only a greater industrial risk but is prone to turn to vicious vicariates for these domestic instincts, for without these hostages to fortune he is prone to focus on self the affections meant for posterity and the perpetuity and improvement of the race. It is not so much the pithy hints on sex hygiene, which did so much good in the army, that the workman needs, although this does good; he needs more a few basal principles of eugenics, which Galton thought the religion of the future, but most of all he needs incentive and opportunity to take a mate and start a family near the dawn of the now rather well-defined age biologically best for nubity and procreation and not after its heyday has begun to fade and he has learned to satisfy these racial needs by inferior surrogates. Perhaps in no domain of our modern life is there so much new knowledge unapplied today, but from which we may hope for so much in the near future.

3. A third basal instinct never so strong as since evolution became the watchword of culture and in a true democracy in which the way to the highest is open to the lowest, is the impulse to get ahead, to progress, to improve, to make the most and the best out of this present life. The motto of even the ever fewer who have some vestige of belief in a future life of compensations "One life at a time, and this one

now." This urge is seen in the millions of young and middle-aged men taking extension, continuation, and correspondence courses, either to make up for neglected opportunities in the past or to keep abreast with the latest advances of knowledge and skill. Nowhere does the fate of that vast multitude of unskilled toilers in the world, who, as statistics show, at twenty have reached their maximum of industrial efficiency and see nothing ahead but decades of the same drudgery, seem so intolerable. Nowhere are parents so anxious that their children should rise above their own estate, and nowhere does the merely living wage seem so exasperating. This country was peopled from the first to now by those in the world who were restless at home and sought and expected more freedom or possessions or both, and this American-itis, as we call its extreme form, colors our every industrial and social problem. In so far as we have escaped the old world stratification of ranks and classes we have bought this immunity at the high cost of having a horror of inferiority and stationariness unprecedented in history, to say nothing of the all dominance of mediocrity. The reorganization of labor must reckon with this tendency and realize that the standard of living of the workman must be indefinitely improved so that he may be able to lay by for the future rather than be dependent upon old-age pensions and accident- and health-insurance, which are too paternal for the American spirit. This spirit, I fear we must realize, nothing will ultimately satisfy short of profit-sharing, although we admit that this involves practically joint ownership with capital. To this, I fear, too, we can see no alternative except the desperately impractical one of either sovietism or the free importation of Mongol or other cheap labor, unless, indeed, some of our interests have to go where labor is instead of bringing it to us. The instinct of ownership, which has made some ten thousand millionaires in this country, is strong in every American, who, perhaps on the whole, prefers wealth to anything else in the world. To hold property, even a little, not only makes for conservatism but extends the limits of personality, making the holder alive to everything in the environment which affects his interests. It is thus one of the most educative and man-making of all the agencies of the modern world, and if it represents real service in the community, it is, on the whole, the very best measure of worthful citizenship.

4. Another very basal impulse, one of the chief traits of

man, is the noetic instinct or curiosity, the lust to know and understand the environment, which began with the very development of the brain and has culminated in modern science. This dynamic urge is strong, in some sense stronger, among the ignorant and technically uneducated who realize their limitations. Even the illiterate workman has his intellect and will use it wisely or otherwise. He welcomes everything and everyone who makes a pungent appeal, as radicals and agitators with their cheap and easy and often perverse solutions of all great problems surely know how to do. His mentation may be ever so rudimentary and collective, as in the mass and the mob, rather than the individual, but mental pabulum of some kind he must have, and this need is as great as that of his body for food. Under the old guild system he found scope for his instincts in the craft itself, but this the ever increasing specialization of the modern mass production denies him so that he seeks to escape mental suffocation by listening to the propagandists of revolution.

Kirschensteiner has evolved culture courses for some forty trades and occupations, so that a boot-black, e.g., knows something of leather, the history of footwear, etc., while the chimney-sweep knows the rudiments of combustion, ventilation, of the chemistry of soot, and thus not only can he use his brains as well as his hands but the two work together and not in separate domains. The ditch-digger is taught something of drainage, sewerage, etc. It is the dawn of the recognition of the noetic instinct that has prompted a few firms in this country to do some one, some several of the following things.

Some make periodic shifts from one process to a very different one so that each workman becomes familiar with several, and a few have a regular rotation by which each may acquire some skill in most processes. Sometimes workmen are taken in groups throughout the entire works by one employed for that purpose who explains to them everything so that they may see the bearing their particular process has upon the finished product. This may take months in a large concern, but it is said to pay. Movies, too, are called into service in various factories so that at intermissions or at the close of certain days men can see the processes on the screen. Other firms have gotten up and given freely to every employee elegantly illustrated textbooks, e.g., a leather book, steel book, harvester book, automobile book, etc., and this has stimulated interest, sometimes to a high degree.

Others have inaugurated a new kind of shop committee, not to confer on the question of wages but upon processes and labor-saving devices and to advance joint interests. Automatic machinery, e.g., a cotton loom, can be so loaded with shuttles that it will run, with no man in the building, for several hours and then stop, and this makes for the shortening of hours. Still other firms encourage bringing in visitors, especially the families of the workmen, and showing them through the mill, for this is thought to have a stimulating influence upon the workman, not only while the visitors are looking on but afterwards for he wishes to show his skill and dignify the importance of his work. In some establishments every process is checked off to the individual so that any defect, even when discovered a long time afterwards, can be brought home to the operator. This increases his sense of responsibility and also helps to develop a pride in good work. Other agencies which enable every worker, in ever so narrow a specialty, to see the whole are often supplemented by civic instruction because many of our workers come from hard conditions in Europe, e.g., the Russians in whose country factory conditions are as bad as serfdom, so that here they are prone, all the more because of their misfortunes in coming to this land of promise and rosy dreams, to give vent to all the antagonisms that were justifiable in the old country but utterly baseless here. The instinct and the example of so many educated, rich, young men in England in going to the colonies, and here in going West or beginning at the very bottom of an industry as workingmen in overalls in order to test themselves out and rise according to their abilities, is also in point.

But we must not forget that this same instinct impels labor to seek to know all about profits and dividends and perhaps to become small stockholders, an ambition that some firms are now doing so much to help realize and which perhaps all should do. The workman also has wider outside interests as a citizen and a member of society, and these we should do far more to guide into the right channels and set backfires to check counsels of violence and direct action. Our government at the beginning of its campaign against the "reds" burned all their literature, as Comstock did that of vice, but has lately seen a new light, so that the post-office department now selects samples of every scrap of seditious and anarchistic literature, even to clippings.

This is perhaps the most complete collection of its kind in the world, and it is used not only in criminal deportation or espionage cases but will be available for the future study of the social-clinician. Our academic economists and even sociologists, freed from excessive war censorship, are now doing invaluable work for the diffusion of sane ideas, which are bound to be a great factor in the harmonization of capital and labor, slow and hard as this campaign of education is going to be.

5. It has been said that almost no man is so feeble or deficient in mind or body that he cannot excel in something, and conversely that the very best man will fail if he finds himself in the wrong place. Psychology is just learning how immensely individuals, even those of the same rank and training, differ from each other, and how immeasurably more effective our entire industrial system would be if we could only put and keep everybody where he would be doing his best thing. Perhaps no single device would accomplish more to give our country the industrial supremacy it merits and now has the unique opportunity to attain in the world than the very arduous one of getting all the square men in square holes and all the round men into the round holes rather than vice versa, which means wastage incalculable. We are tunneling this problem from both sides of the mountain; on the one hand, we have those who devote themselves to job analysis, finding just the traits most necessary for each vocation and even each specialty, and, on the other hand, vocational guidance studies individuals to find *the* one thing that nearly all can do well. We know the incalculable service that the personnel department rendered the army by listing not only the trade but from three to five degrees of proficiency in it which each soldier had acquired, utilizing thus all the skills required in times of peace. Now there is a rapidly growing recognition of the advantages of the same kind of psychology for the arts of peace. True, much of the work has hitherto been done by amateurs and even fakirs, but many firms are now seeking trained psychologists to test their employees and assign them to the place in the system for which they have the best native or acquired aptitudes. With aptitude, it must be remembered, goes taste and interest, so that not only productive efficiency but content is thus augmented. We have long realized, and are doing so now more than ever before, the growing specialization necessary for effective large-scale produc-

tion, but we are only just beginning to realize the fact that Nature itself has specialized individuals vastly more than we supposed, so that in all this work we are simply utilizing the energies at our hand untouched. Almost pathetic are some of the tales of workmen whom only a slight analysis would have rescued from doing things for which they were utterly unfit and put to things for which they were preeminently fitted, thus rendering them not only happier but more secure and where the differential wage system prevails, often able to earn more. Unless all signs fail, the time is at hand when everyone, before finally entering upon his life work, whether at the end of his required schooling or at graduation, will have more self-knowledge, and when institutions that give diplomas will also study each individual more and be able to advise and guide him into a career that promises the most for him.

6. Man is the most gregarious of all animals, and gregarious animals are far more intelligent and domesticable than those of solitary habits. Compare, for example, the dog and the cat. But man is the most gregarious of all creatures and was so even before the time of his simian ancestor's descended from the trees. The prehistoric Cro-Magnon race eliminated the well-established Neanderthals in primitive Europe because they had a far more elaborate social organization. Man's very soul languishes in solitude, and there is no such stimulus as intercourse. We have lately listed 113 types of child organizations but no one has even attempted to list all the thousands of organizations that have sprung directly from the herd instincts in adults.

The passion to get together and act collectively, which is seen all the way from the street gang and mob to the club, sect and party, marks man as preeminently *the* herd animal. It is this instinct that depletes the country for the city, that is one factor in the difficulty of drawing servant girls and farm hands into the country. The individual needs to merge with his fellow-beings, and most of our thinking and still more of our feeling is done collectively in groups. Our conduct is made up for the most part of suggested action, and habits and character are molded by the social milieu. There are few psychic horrors greater than those described as due to long confinement or isolation that is really solitary, and when condemned to this the soul instinctively "pals" with the lower forms of life or invents imaginary companions.

This instinct is one of the chief charms of the saloon, and now that we have dispensed with it, the workman finds the vicariate for his social instincts in the trade union, which is thus greatly vitalized, or perhaps even in the excitement of a strike. All this shows that for this instinct for an assembly, of getting into frequent and close rapport with his fellow-men provision must always be made, for every kind of wholesome convivium vents and releases a strain and tension which may break out in riotous form. Never has trade solidarity and consciousness been so intense as it is today in this country, to say nothing of the soviet in Russia and the syndicalists in France, so that we have here new forces to which we must readjust.

I have thus tabbed off and very inadequately sketched the six instincts which, as I see it, psychology deems oldest and most basal. There are, of course, plenty more, and there is still much diversity of view as to the relative importance and strength of the fundamental as well as of the accessory energies of Mansoul. There are also many other very different chapters in the relation of the science I represent to industry, viz., the psychology of skill, of employers, of efficiency and inventions, etc. But I think that I only voice the deep conviction of every worker in this field in saying that the world is now entering a new psychological age, which perhaps the historians of the future will call another renaissance in recognition of the significance of the psychic forces in the world, forces often too deep and large to enter the narrow field of consciousness. Primal urges of the soul, some of them as old as animal life itself, set in action currents that have behind them the whole momentum of evolution. Manifold as are the expressions of these primordial instincts, plastic as human nature is in adapting to new environments, in some respects its basal traits can no more be changed than can the laws of physics and chemistry. . . There is one and only one source to which we can turn for hope that evolutionary processes will not be reversed but go on, and that is to the unconscious instinctive nature of man, which in the past has evolved language, religion with all its deities and rites, every social, political and industrial institution, and, because man is a herd animal, devised so many ways of checking egoism. His sentiments, feelings, instincts are as much vaster than his intellect as the folksoul is greater than the individual, and in human nature, as all progress bears witness, the good predominates over the bad. It is these deeper currents

in the human soul that have wrought every salvation in history, and from this source alone can salvation now come. We do not yet know how. It will come by no panacea, and it will not come suddenly but will be so slow and hard that the patience of the world is likely to be tried as never before. It may not come from us who study the human soul because its problems are too vast for us, but it is well that we are beginning to feel a new responsibility for uncapping energies. We are at the stage where chemistry was in the days of Lavoiseir or physics in the days that preceded Newton. But our young men are seeing visions and our old men are dreaming dreams of an age when psychic forces will be just as dominant in every great enterprise of man as science is today in industry.

SUBSTITUTING HIGHER MOTIVES FOR LOWER ¹

I suppose most of us would admit that emulation in service is desirable and is actually operative in some quarters, but would question whether it is not too high to be generally practicable. . .

Even in our present confused and selfish scheme of economic life the best work is largely done under the impulse of service emulation. . .

Nor can there be much doubt that a great part of mechanical workmen, having a skilled trade into which it is possible to put interest and a progressive spirit, are animated by the sense of sharing in a great productive whole. Perhaps, like most of us, they need at times the spur of knowing that they must work, but this is not what is most present to their imaginations or elicits their best endeavors. The wage question, as the focus of controversy, is kept before the mind and leads us, I believe, to exaggerate the part which pecuniary calculations play in the mind of the handicraftsman. For the most part he resembles the teacher or doctor in that he wishes to think no more about money in connection with his work than he feels he has to. The mechanics I see about me—plumbers, masons, furnace-men and the like—are as full of the zest of life as any class; they like the struggle, the sense of hope and power and honest service. ✓

¹ Charles Horton Cooley. *Social process*. p. 130, 131, 134, 135, 139, 140, 142, 321, 322, 323, 324, 325, 343. Charles Scribner's Sons. New York. 1918.

It is almost certain that the grosser forms of economic want and terror, like corporal punishment in the schoolroom, paralyze rather than stimulate the energies of society. This liability to starvation and freezing, degradation and contempt for not having money in one's pocket, with no inquiry why, this nightmare of evil to be averted not by service but by money, and only money, no matter how you get it—this is overdoing the pecuniary motive. It brutalizes the imagination and creates an unhuman dread that impels to sensuality and despair. . .

One of the main forces in keeping economic motive on a low moral level has been the doctrine that selfishness is all we need or can hope to have in this phase of life. Economists have too commonly taught that if each man seeks his private interest the good of society will take care of itself, and the somewhat anarchic conditions of the time have discouraged a better theory. In this way we have been confirmed in a pernicious state of belief and practice, for which discontent, inefficiency, and revolt are the natural penalty. A social system based on this doctrine deserves to fail.

When pressed regarding this matter economists have not denied that their system rests on a partial and abstract view of human nature; but they have held that this view is practically adequate in the economic field, and have often seemed to believe that it sufficed for all but a negligible part of human life. On the contrary, it is false even as economics, and we shall never have an efficient system until we have one that appeals to the imagination, the loyalty, and the self-expression of the men who serve it. . .

By a sense of security I mean the feeling that there is a larger and more enduring life surrounding, appreciating, upholding the individual, and guaranteeing that his efforts and sacrifice will not be in vain. I might almost say that it is a sense of immortality; if not that, it is something akin to and looking toward it, something that relieves the precariousness of the merely private self. It is rare that human nature sustains a high standard of behavior without the consciousness of opinions and sympathies that illuminate the standard and make it seem worth while. It lies deep in the social nature of our minds that ideals can hardly seem real without such corroboration.

In a still more tangible sense I mean a reasonable economic security. A man can hardly have a good spirit if he feels that the ground is unsure beneath his feet, that his social world may

disown and forget him tomorrow. There is scarcely anything more appalling to the human spirit than this feeling, or more destructive of all generous impulses. It is an old observation that fear shrinks the soul; and there is no fear like this. The soldier who knows that he may be killed at any moment may yet be perfectly secure in a psychological sense; secure of his duty and of the sympathy of his fellows, his mind quite at peace; but this treachery of the ground we stand on is like a bad dream. As one will shrink from attaching himself in love and service to a person whom he feels he cannot trust, so he will from giving his loyalty to an insecure position. It is impossible that such tenure of function as now chiefly prevails in the industrial world should not induce selfishness, restlessness, and a service only mercenary. . .

While it is not indispensable, in order to secure emulation in service, that the work should allow of self-expression and so be attractive in itself, yet in so far as we can make it self-expressive we release fresh energies of the human mind. The ideal condition is to have something of the spirit of art in every task, a sense of joyous individual creation. We are formed for development, and an endless, hopeless repetition is justly abhorrent. No matter how humble a man's work, he will do it better and in a better spirit if he sees that he can improve upon it and hope to pass beyond it.

Judged by such standards, our present order is inefficient, because its tasks are so largely narrow, drudging, meaningless, inhuman. . .

It is true that the pecuniary motive may also be, indirectly, a motive of self-expression; that is, for example, a girl may work hard for \$10 with which to buy a pretty hat. It makes a great difference, however, whether or not the work is directly self-expressive, whether the worker feels that what he does is joyous and rewarding in itself, so that it would be worth doing whether he were paid for it or not. The artist, the poet, the skilled craftsman in wood and iron, the born teacher or lawyer, all have this feeling, and it is desirable that it should become as common as possible. I admit that the line is not a sharp one, but on the whole the pecuniary motive may be said to be an extrinsic one, as compared with the more intrinsic character of those others which I have called motives of self-expression.

When I say that self-expression is a regulator of productive activity I mean that, like the pecuniary motive, though in a different way, it is the expression of an organic whole, and not necessarily a less authoritative expression. What a man feels to be self-expressive springs in part from the instincts of human nature and in part from the form given to those instincts by the social life in which his mind develops. Both of these influences spring from the organic life of the human race. The man of genius who opens new ways in poetry and art, the social reformer who spends his life in conflict with inhuman conditions, the individual anywhere or of any sort who tries to realize the needs of his higher being, represents the common life of man in a way that may have a stronger claim than the requirements of pecuniary demand. As a motive it is quite as universal as the latter, and there is no one of us who has not the capacity to feel it.

As regards the individual himself, self-expression is simply the deepest need of his nature. It is required for self-respect and integrity of character, and there can be no question more fundamental than that of so ordering life that the mass of men may have a chance to find self-expression in their principal activity. . .

Self-expression springs from the deeper and more obscure currents of life, from subconscious, unmechanized forces which are potent without our understanding why. It represents humanity more immediately and its values are, or may be, more vital and significant than those of the market; we may look to them for art, for science, for religion, for moral improvement, for all the fresher impulses to social progress. The onward things of life usually come from men whose imperious self-expression disregards the pecuniary market. In humbler tasks self-expression is required to give the individual an immediate and lively interest in his work; it is the motive of art and joy, the spring of all vital achievement. . . Closely related to this is the sense of worthy service. No man can feel that his work is self-expressive unless he believes that it is good work and can see that it serves mankind. If the product is trivial or base he can hardly respect himself, and the demand for such things, as Ruskin used to say, is a demand for slavery. Or if the employer for whom a man works and who is the immediate beneficiary of his labors is believed to be self-seeking beyond what

is held legitimate, and not working honorably for the general good, the effect will be much the same. The worst sufferers from such employers are the men who work for them, whether their wages be high or low.

As regards the general relation in our time between market value and self-expression, the fact seems to be something as follows: Our industrial system has undergone an enormous expansion and an almost total change of character. In the course of this, human nature has been dragged along, as it were, by the hair of the head. It has been led or driven into kinds of work and conditions of work that are repugnant to it, especially repugnant in view of the growth of intelligence and of democracy in other spheres of life. The agent in this has been the pecuniary motive backed by the absence of alternatives. This pecuniary motive has reflected a system of values determined under the ascendancy, direct and indirect, of the commercial class naturally dominant in a time of this kind. I will not say that as a result of this state of things the condition of the hand-workers is worse than in a former epoch; in some respects it seems worse, in many it is clearly better; but certainly it is far from what it should be in view of the enormous growth of human resources.

In the economic philosophy which has prevailed along with this expansion, the pecuniary motive has been accepted as the legitimate principle of industrial organization to the neglect of self-expression. The human self, however, is not to be treated thus with impunity; it is asserting itself in a somewhat general discontent and in many specific forms of organized endeavor. The commercialism that accepts as satisfactory present values and the method of establishing them is clearly on the decline and we have begun to work for a more self-expressive order. . .

Production has not always lacked ideals, nor does it everywhere lack them at present. They come when the producing group gets a corporate consciousness and a sense of the social worth of its functions. The mediæval guilds developed high traditions and standards of workmanship, and held their members to them. They thought of themselves in terms of service, and not merely as purveyors to a demand. In our time the same is to some extent true of trades and professions in which a sense of workmanship has been developed by tradition and training. Doctors and lawyers are not content to give us what we

want in their line, but hold it their duty to teach us what we ought to want, to refuse things that are not for our best good and urge upon us those that are. Artists, teachers, men of letters, do the same. A good carpenter, if you give him the chance, will build a better house than the owner can appreciate; he loves to do it and feels obscurely that it is his part to realize an ideal of sound construction. The same principle ought to hold good throughout society, each functional group forming ideals of its own function and holding its members to them. Consuming and producing groups should cooperate in this matter, each making requirements which the other might overlook. The somewhat anarchical condition that is now common we may hope to be transitory. The general rule is that a stable group has a tendency to create for itself ideals of service in accord with the ruling ideals of society at large.

MOTIVES IN LARGE SCALE BUSINESS¹

Four main motives have led men to expand business enterprises. On the whole they are not economic, but rather psychological; they are the motives incident to the struggle for conquest and achievement—the precious legacy of man's "predatory barbarism." Primarily a man measures the success of a business by increased size, and secondarily by increased profits.

The most powerful motive that leads a man to expand a business is the illusion of valuing himself in terms of his setting. The bigger the business, the bigger the man. A man prefers to direct a large business rather than a small one; just as the borough president seeks the mayoralty and the mayor, the governorship. He likes to feel himself of influence in the sphere of his activity. He likes to be somebody, to occupy a "place in the sun" in the business world.

This motive is much more fundamental than is usually realised. A man who operates successfully a corner drug store may be content with the business as it is, provided he finds the field of his primary interests outside of his business—home, sport, or an avocation. In such a case, which is common, the business is an insignificant means to an end. It is not a part

¹ Arthur Stone Dewing. *The Financial Policy of Corporations*. Vol. 4. p. 4-7. The Ronald Press Company. New York. 1920.

of the real life of the man, but merely an attendant circumstance in the problem of extracting a livelihood out of a competitive and unsentimental world. But such men are not true business managers in the sense that the economist uses the word "manager" or "entrepreneur." Their field of achievement is not business. Men who can be even broadly classified as business managers and who value success in productive enterprise as something worth while in itself—rather than as an insignificant means to a greater end—want their business undertaking to bear the outward signs of successful achievement. Increasing size is the most obvious of these signs. The race-old instinct of conquest becomes translated in our twentieth century economic world into the prosaic terms of corporate growth. Business expansion is the spirit of a modern Tamerlane seeking new markets to conquer. It is a pawn for human ambition.

The second motive, less significant, one is led to believe, is the creative impulse. A business manager has an aversion to stagnation; he wishes to be constructive. He wishes to make actual the vague images of progress. The only field with which he is familiar is his business, and in the fortunes of his business he sees the realization of his ideals. It is a commonplace psychology, current since the brilliant introspective studies of the elder Mill and Reid, that somewhere in the mental structure of all of us lies the impulse to build, to see our ideas take form in material results. The impulse to build is at the same time an important element in inventive and artistic genius and in skilful craftsmanship. The particular form in which it finds expression is, among men of ordinary ability, certainly a matter of accident. And the particular form close at hand to the business manager is his business. A distinguished business manager, at sixty-nine years of age, to whom wealth had ceased to have a significance, was heard to outline in detail for an already well-rounded and world-wide business, steps in reconstruction and enlargement which would ordinarily take a lifetime to achieve. An expanding business affords a sphere for the kind of creative expression demanded by our twentieth century industrialism.

The third motive is the economic. My own observation is that the vast majority of business men who plan enlargement, consolidations, and extensions of their business are not actuated primarily by the impulse to make more money, although they unquestionably place this motive uppermost when they need to

present plans for enlargement to directors and stockholders. Since increased profits have so obvious and direct an appeal, and since no other motive can sufficiently justify the investment of other people's money, it is natural to place the motive of increased profits foremost. And it appears foremost in every business manager's mind when he attempts to justify a business policy which may have been in the first instance subconsciously prompted by less obvious and more basal motives.

The fourth motive is the satisfaction in taking speculative chances. Business managers like to be dealing with a future full of concrete uncertainties. They like to apply direct empirical tests to business policies, the results of which are at best uncertain. A successful business manager is invariably a man of imagination. Invariably the man of imagination revels in uncertainties. He is by nature a speculator—if we use the term in its broadest significance and without disparagement. The development of constructive plans partakes of the nature of a game. All men enjoy the game they think they can play. ✓



II. EXECUTIVE MANAGEMENT AND THE MIND OF THE WORKER

[Virtually all psychologists observe that business managers commonly miscalculate the mind of the worker in that they attribute his shortcomings and misbehavior to wilful and deliberate perverseness.] The repeated complaint made by management is that the faults, sins and inefficiencies of labor are the result of a pernicious act of will. [The corresponding assumption is that labor ought to change its mind by an act of will, ought to see the reasonable way of behavior, ought to revise its mental outlook as a matter of volition and self-control. This common view held by management grossly overrates the element of detached and independent reason and grossly underrates the element of impulsive human nature. The faults and perversities of labor are due to natural causes, and certain pioneer managers have found that by changing the natural causes, they eliminate the faults and perversities, and substitute for them sound mental attitudes and efficient behavior. Psychologists generally emphasize that the so-called faults of labor are due to unscientific methods of management which do not rightly encourage the "wholesome tendencies" of human nature nor "curb the pernicious tendencies." In other words, psychology indicates that the responsibility for the misconduct of labor rests not with labor, but with management.] Executives cannot shift the blame upon a perverse human nature on the part of the workers, for their human nature is as good as that of anybody else. The blame rests upon executives for not having developed methods of management which direct the human nature of the workers in the proper channels.

At the outset, therefore, psychology presents a strong challenge to management to accept the responsibility for reconstructing business practises so as to "help the better and repress the pernicious tendencies" of labor. But this challenge comes face to face with many traditional axioms of management and with a background and outlook which often are slow to change. A

few pioneer business men here and there acquire the viewpoint of modern psychology and demonstrate in practical achievements what can be done. The rapidity with which the rank and file of executive management come to understand the mind of the worker in a manner similar to that of the pioneer managers determines the rate of industrial progress.

A BROAD PERSPECTIVE IN HUMAN CONTROL¹

As the tendencies of human nature are the permanent basis of study which gives to the subject called Political Science whatever scientific quality it possesses, so the practical value of that science consists in tracing and determining the relation of these tendencies to the institutions which men have created for guiding their life in a community. Certain institutions have been found by experience to work better than others; i.e., they give more scope to the wholesome tendencies, and curb the pernicious tendencies. Such institutions have also a retroactive action upon those who live under them. Helping men to goodwill, self-restraint, intelligent cooperation, they form what we call a solid political character, temperate and law-abiding, preferring peaceful to violent means for the settlement of controversies. Where, on the other hand, institutions have been ill-constructed, or too frequently changed to exert this educative influence, men make under them little progress toward a steady and harmonious life. To find the type of institutions best calculated to help the better and repress the pernicious tendencies is the task of the philosophic enquirer, who lays the foundations upon which the legislator builds. A people through which good sense and self-control are widely diffused is itself the best philosopher and the best legislator, as is seen in the history of Rome and in that of England. It was to the sound judgment and practical quality in these two peoples that the excellence of their respective constitutions and systems of law was due, not that in either people wise men were exceptionally numerous, but that both were able to recognize wisdom when they saw it, and willingly followed the leaders who possessed it. . .

The ancient world, having tried many experiments in free

¹James Bryce. *Modern Democracies*. Vol. 1. p. 9, 10, 12. Published by The Macmillan Company. 1921. Reprinted by permission.

government, relapsed wearily after their failure into an acceptance of monarchy and turned its mind quite away from political questions. More than a thousand years elapsed before this long sleep was broken. The modern world did not occupy itself seriously with the subject nor make any persistent efforts to win an ordered freedom till the sixteenth century. Before us in the twentieth a vast and tempting field stands open, a field ever widening as new States arise and old States pass into new phases of life. More workers are wanted in that field. Regarding the psychology of men in politics, the behaviour of crowds, the forms in which ambitions and greed appear, much that was said long ago by historians and moralists is familiar, and need not be, now, repeated. But the working of institutions and laws, the forms in which they best secure liberty and order, and enable the people to find the men fit to be trusted with power—these need to be more fully investigated by a study of what has proved, in practice, to work well or ill. It is Facts that are needed: Facts, Facts, Facts.

THE CHALLENGE TO MODERN MANAGEMENT¹

In recent weeks we have heard much about the efficiency of industrial democracy, of shop committees, of senate and house plan, of collective bargaining, as the panaceas for all labor problems. During the same period, we have had striking examples of the inadequacy of all these plans. Industrial democracy is a misnomer unless fairly and honestly applied. Collective bargaining is a great danger if wrongly applied and used as an instrument of autocratic power.

No—labor problems have always existed and are likely to continue. There is no panacea, as industrial democracy, profit sharing, committee system, open shop, closed shop or collective bargaining. None of these agencies will accomplish or avail much unless there be behind them and disseminated through every fibre and thread, the spirit of fairness, honesty and justice. If these principles be present, there will be no labor trouble. And again, if they be present, it does not matter much what plan is used. This accounts for many striking examples of the

¹ L. W. Wallace, President of the Society of Industrial Engineers. Annual address. Report of Proceedings, October 29-31, 1919. p. 11-12.

successful management of labor through each of the plans named. Because these successful examples can be pointed out is the reason for the confusion in the minds of many—whereas if a close analysis be made, it would be found that the wholesome conditions existing in each case were not due to the plan in vogue, but to the fact that the employer and the employee each, in turn, was a believer in, and a practiser of, the cardinal virtues of honesty, fairness and justice.

The unfortunate thing is that many employees; many employers; many associations of employers; many labor organizations, have violated and ignored these principles. Through the utter disregard of the principles of honesty, fairness and justice, great damage has been done, and to quote, "Great powers have been used arbitrarily and autocratically, to exact unmerited profit or compensation by both capital and labor. This policy of exacting profit rather than rendering service has wasted enormous stores of human and natural resources, and has put in places of authority those who seek selfish advantage regardless of the interests of the community." The problem before the American public is to evolve those plans and to inaugurate those policies that will make such use of arbitrary and autocratic power a grave offense against the community and to make it impossible for any such arbitrary power to invoke its wrath against the will and against the welfare of the masses. Such plans should provide severe and sure punishment for the autocratic employer or autocratic labor leader who wilfully violates the principles of honesty, fairness and justice, and by such violations brings hardships, despair and heartaches upon the masses. One is just as guilty as the other and we have had glaring examples of the evils of the financial trust and of the labor trust. Both are equally culpable and both should be dealt with in like manner.

Many of the abuses have grown up through ignorance of cause and effect. Poor management, incompetent supervision, excessive equipment, large inventories, poor equipment, inadequate sales policies and other causes have resulted in reduced income and a loss of net profits. Ignorance of the causes leads to a misinterpretation of the reason for the effects. In arriving at a solution incompetency in management again shows itself; faulty analysis and incorrect conclusions follow. Wages are cut, demands increased, working conditions made less desirable; all of which is a disregard of the principles of honesty, fairness

and justice. The result being strained relationships, strikes, bloodshed, destruction of property—no one permanently benefitted.

Ignorance of cause and effect on the part of labor leads to many misinterpretations and faulty conclusions; such as to believe that to limit production is to benefit the worker; to decrease the length of the work-day is conducive to prosperity and the well being of society and of labor; to oppose the training of the worker, to place all workers in a given trade on a par, regardless of capacity or ability, to demand compensation for which no adequate service has been rendered, to deny the right of individual choice of employment. These policies inevitably lead to reduction of production, increased cost, to suspicion, to the disregard of the rights of property, to the rights of individuals and to the rights of society. The result being strained relationships, strikes, bloodshed, destruction of property,—no one benefitted.

It is the function and province of the industrial engineer to make correct analysis, to predict effects through known causes. It is purely the mission of the industrial engineer of wide experience, of great foresight and of unselfish motive to see to it:

First:—That every action is based upon the principles of honesty, fairness and justice to the employee, to the employer and to the public.

Second:—To so formulate the plan of action as to eliminate all unfair privilege of employer and employee and to make it possible for each to fulfill its responsibilities to the community.

Third:—To so organize the plant or industry as to make it exceedingly difficult for an incompetent to hold a position of authority or to exert autocratic control.

THE BACKGROUND OF GREAT BUSINESS MEN¹

Possibly the chief influence in the long run in promoting combinations of capital, as well as their most far-reaching effect in the earlier days of the trusts, was the element of personal ambition which is fostered by monopoly. There can be no doubt that, in the case of the larger industrial combinations, the belief on the part of the managers that a virtual monopoly could

¹Jeremiah W. Jenks and Walter E. Clark. *The Trust Problem*. Rev. ed. 4th ed. 175-6. Doubleday, Page and Company. Garden City, L. I. 1917.

be secured was a powerful element toward bringing about their formation. The pride of power, and the pleasure which comes from the exercise of great power, are in themselves exceedingly attractive to strong men. As one with political aspirations will sacrifice much and take many risks for the sake of securing political preferment in order that he may in this way rule his fellows, so a successful organizer of business derives keen satisfaction from feeling that he alone is practically directing the destinies of a great people, so far as his one line of business is concerned. Mr. Havemeyer said that his ambition was to refine the sugar of the American people. Mr. Gates asserted that it was the ambition of the organizers of the American Steel and Wire Company to control the wire output of the world. One cannot say that these ambitions are not as worthy as those of politicians, and as natural. No one can question that these elements of personal satisfaction and pride are most powerful factors in all lines of social intercourse, and this pride could not be gratified in business short of the belief on the part of these men that they can secure a practical monopoly. This ambition will not be gratified by the control of merely a very large business. Napoleon was not content to be the head of a great state. His ambition would brook no rival. May not the ambition of a sugar king or a petroleum magnate well be of like imperial nature, though in a more restricted field? And yet, in the case of Napoleon and possibly of other potentates of later date the event showed that ambition had overleaped itself. Likewise the chief successes of later years have seemed to rest with those who have been content with less than world domination and who have been ready to accept merely strong leadership.

THE PROFOUND RESPONSIBILITY OF BUSINESS EXECUTIVES¹

Our task, thus, is nothing less than to rehumanize industry, to break down the disastrous partition that has grown up between brain-work and hand-work, to appeal at every step to

¹ G. Stanley Hall. Address given at the Fifth Annual Convention of the Vocational Educational Association of the Middle West, Chicago, January 17, 1919. Pedagogical Seminary. Vol. 26. 1919. p. 77-8.

mind lest we add to the degradation of labor, remembering that the brain in its evolution was hand-made and that in all progressive periods of the past the two have always gone and grown together. We must find a way of putting not merely head and intelligence but heart into work, as also was the case of yore. We must search everywhere for the culture elements—which are inherent in every industry and even in every process, and which it is the tragedy of modern industrialism to have lost. Work has made and it alone can perfect man; hence we must attempt to restore or else create a morale in every great branch of industry. All this stupendous task I believe can be wrought out, because nearly every item of it has been accomplished somewhere at some time.

There is a very pregnant sense in which the war is not ended but only transferred to other fields to be carried on by other agents. Those of us who have not smelled powder must now come forward and take up the battle which is waged against conservatism and inertia, by which things tend to slip back into the same old ruts as before if we do not mobilize and use all the unprecedented opportunities and incentives to reform to make the educational, industrial, social, political and religious world fitter to live in; for otherwise we break faith with the millions who have died. Our foes are timidity and laziness in this new spiritual conflict to which the battle of arms has bequeathed its precious legacy. To say that reforms are now needed, though hard and dangerous, is true, but to leave them unattacked is a slackerdome unworthy of the spirit of our armies in France. The new struggles we ought to enter upon are the harvest of victory, and are harder and will take far longer than the war itself.

THE INFLUENCE OF UNANALYZED CUSTOMS ("MORES")¹

A society is never conscious of its mores until it comes in contact with some other society which has different mores, or until, in higher civilization, it gets information by literature. The latter operation, however, affects only the literary classes.

¹ William G. Sumner. *Folkways*. p. 78-80. Ginn and Company. Boston. 1911.

not the masses, and society never consciously sets about the task of making mores. In the early stages mores are elastic and plastic; later they become rigid and fixed. They seem to grow up, gain strength, become corrupt, decline, and die, as if they were organisms. The phases seem to follow each other by an inherent necessity, and as if independent of the reason and will of the men affected, but the changes are always produced by a strain toward better adjustment of the mores to conditions and interests of the society, or of the controlling elements in it. A society does not record its mores in its annals, because they are to it unnoticed and unconscious. When we try to learn the mores of any age or people we have to seek our information in incidental references, allusions, observations of travelers, etc. Generally works of fiction, drama, etc., give us more information about the mores than historical records. It is very difficult to construct from the Old Testament a description of the mores of the Jews before the captivity. It is also very difficult to make a complete and accurate picture of the mores of the English colonies in North America in the seventeenth century. The mores are not recorded for the same reason that meals, going to bed, sunrise, etc., are not recorded, unless the regular course of things is broken.

Inertia and Rigidity of the Mores

We see that we must conceive of the mores as a vast system of usages, covering the whole life, and serving all its interests; also containing in themselves their own justification by tradition and use and wont, and approved by mystic sanctions until, by rational reflection, they develop their own philosophical and ethical generalizations, which are elevated into "principles" of truth and right. They coerce and restrict the newborn generation. They do not stimulate to thought, but the contrary. The thinking is already done and is embodied in the mores. They never contain any provision for their own amendment. They are not questions, but answers, to the problem of life. They present themselves as final and unchangeable, because they present answers which are offered as "the truth." No world philosophy, until the modern scientific world philosophy, and that only within a generation or two, has ever presented itself as perhaps transitory, certainly incomplete, and liable to be set aside tomorrow by more knowledge. No popular world phil-

osophy or life policy ever can present itself in that light. It would cost too **great** a mental strain. All the groups whose mores we consider far inferior to our own are quite as well satisfied with theirs as we are with ours. The goodness or badness of mores consists entirely in their adjustment to the life conditions and the interests of the time and place. Therefore it is a sign of ease and welfare when no thought is given to the mores, but all cooperate in them instinctively. The nations of southeastern Asia show us the persistency of the mores, when the element of stability and rigidity in them becomes predominant. Ghost fear and ancestor worship tend to establish the persistency of the mores by dogmatic authority, strict taboo, and weighty sanctions. The mores then lose their naturalness and vitality. They are stereotyped. They lose all relation to expediency. They become an end in themselves. They are imposed by imperative authority without regard to interests or conditions (caste, child marriage, widows). When any society falls under the dominion of this disease in the mores it must disintegrate before it can live again. In that diseased state of the mores all learning consists in committing to memory the words of the sages of the past who established the formulas of the mores.

OVERCOMING THE POWER OF TRADITION AND HABIT ¹

In the business world, as in all occupations involving human beings, to illustrate the need of selected habits and adaptive variability in a field too often overlooked, the manner in which men are treated largely determines the success of manager or foreman. Certain methods have been acquired from the environment, education, or training, and they are followed. They secure results but perhaps not the best. Yet these managers know no other way. The Filene Cooperative Association of Boston is an instance of the reversal of traditional business habits. The William Filene's Sons' Company decided to give the men and women behind the counter of their department store a voice in shaping the policies of the company. The asso-

¹ Edgar James Swift. *Psychology and the Day's Work*. p. 102-4, 106-8. Charles Scribner's Sons. New York. 1918.

ciation, composed of members of the firm and all employees, may initiate or amend any rule that affects the efficiency of employees. The decision, passed by the council, may be vetoed by the management, but if after such a veto the association again passes it over the veto, by a two-thirds vote, the decision of the association is final. The plan made a sudden break from habitual business methods, yet it succeeded. A single instance will show how admirably and reasonably the employees have responded. "The question for vote was whether the store should be closed all day Saturday, June 18, the day preceding Bunker Hill Day, a state holiday. If this were done it would give the employees a three-day holiday. . . Agitation had been quite intense during the days preceding the meeting, for the employees naturally were interested in having an additional day's rest with pay; the meeting was to hear both sides of the question and to decide. After those in favor of closing had made their plea, those opposed brought out an argument few had considered, the fact that conditions were not analogous. It was pointed out that a Saturday in the middle of June was much more valuable and costly to lose than one in July, that it was the last Saturday before the bulk of the school graduations and that much more business would in all probability be lost. When the vote was taken the employees voted by an overwhelming majority not to have the extra holiday. . . The firm considers" (the association) "worth many times what it has cost them in their time and money. It is no longer an experiment; it is a fact, and it has made the interests of employer and employee harmonize."

These practical results from the methods of the Filene Co-operative Association are additional proof of the expediency of selected habits. Observation shows that it is not only inefficient but also unnecessary to settle down into the line of least resistance and adopt habits of ease or tradition. Reservoirs of energy commonly unused reveal themselves in various ways. In physical endurance, for example, it is well known that at a certain point fatigue ensues. Then, if we persevere, we overcome the resistance and get our "second wind." We feel more vigorous than before and push on to a new achievement, perhaps breaking the record. Under such circumstances we have clearly tapped a new supply of energy, usually concealed by the first appearance of ennui and fatigue. "Mental activity," James once

said, "shows the phenomenon as well as physical, and in exceptional cases we may find, beyond the very extremity of fatigue-distress, amounts of ease and power that we never dreamed ourselves to own, sources of strength habitually not tapped at all, because habitually we never push through the obstruction, never pass those early critical points." Evidence of this is seen in the achievements occasionally observed in men suddenly placed in positions of great responsibility. The demand on their ability is worth their best effort and they rise to the emergency. "I did not know that it was in him," is our acknowledgement of his bursting through the barrier. It was not in him until he broke with his old habits of adaptation to an inferior level of accomplishment. . .

Viewed from another angle, habit has acquired immense significance in the last few years because of the greater acceleration with which changes come and go. Today a man's success in the business and professional world depends upon rapid adaptation to varying conditions. Fifty years ago business methods were settled. A young man learned a trade, entered his father's store, spent a year "reading" law, or studied medicine with a physician, and was quite sure of satisfactory competence. Business methods were static, and scientific knowledge did not go forward with leaps and bounds. Today everything is altered. Change, rapid change, is the conspicuous fact in all occupations; and this reveals new meaning in the utility of habit.

"The fundamental limitation of the majority of men, from the standpoint of availability for promotion," said the manager of a large manufacturing company recently, "consists in lack of capacity to adjust themselves to new requirements. . . I find very few individuals making any effort to think out better ways of doing things. . . We need, at the present time, four or five subordinate chiefs in various parts of the factory, and I can fill none of them satisfactorily from material in hand." Yet this "material" consists of over a thousand men. Evidently, habits of doing things, of reacting to situations, reaches far into success and failure.

In both physical and mental activity change reduces to an alteration of habits; and habit, we have found, is concerned with nervous impulses and with the activity of nerve-centers. The function of the nervous system is to coordinate and unify movements so as to adapt them to the needs of the individual.

In the lower animals this coordination has been, to a large extent, "set" in instinctive actions. In man the same tendency exists for actions to become "fixed." We then call them reflex. There is always a selection of movements, but this selection is rarely conscious. In the more delicate movements it is never conscious. The question then arises, how is the selection made? The determining force is always environmental necessity. Among the lower animals it is the requirements of survival—a relentlessly compelling force—and in man it is also the demands of the situation. Success in the business or profession in which one is engaged is the remote incentive. This, of course, creates immediate motives in the various details of the work. Obviously, unpleasant consequences of certain actions will cause the selection of others. But, as was said before, there is rarely a definite standard of success. Consequently, approximately successful actions and methods are selected, and soon they become fixed habits. A careless paper-hanger makes poor workmen of his apprentices, because, if the employer is satisfied, the consequences of indifferent workmanship are not obviously unfavorable. *Habits cease to change and to become more efficient when no practical motive compels improvement*; and with human beings improvement leading to more successful adaptation to conditions and situations has largely supplanted the requirements of mere survival as a driving force.

WHAT THE WORKER EXPECTS OF MANAGEMENT¹

The point to be kept clearly in mind in thinking about industrial problems requiring current action is that we are in the regime of capitalistic industry, in which managers are clearly charged with responsibility for vision and leadership, and that for all practical purposes, to us, that regime is not likely to be fundamentally changed, and the accompanying managerial responsibilities modified; or at any rate modified only toward still greater responsibilities. There is a fringe of managers who are thoroughly autocratic in mental attitude, and who would resort to extreme measures of discipline if the workers

¹Harlow S. Persons. *Selling Production to the Management*. Annals of the American Academy. September, 1920. p. 134-5.

could not be content with crystallized relations and were insistent in their strivings to express a desire for change; and there is a compensating fringe of workers who demand radical changes in the social and industrial structure, and strive, some of them destructively, to achieve their ideals; but neither of these represent the great directive force in industry. They are a profound influence in making others take thought, but the actual course of step-by-step industrial development will be determined by cooperation of the moderate workers, the latter asking for progressive improvement and the former desirous to assume leadership in finding the improvement that is really mutually progressive. The demand for improvement by the great body of moderate workers constitutes a challenge to management; a challenge to display vision, initiative and leadership.

Production a Problem of Progressive Management

Therefore, it should be kept clearly and forcibly in mind that the pressing problem of production is primarily a problem of management; and in times of confusion and of change more than ever a problem of the management, calling for constructive plans and leadership in winning acceptance of these plans and in giving them effect.

It is not abnormal for the average manager to meet this challenge with reluctance. It is normal for him to simplify his problem and, if he has once constructed a formula for securing production under more or less familiar conditions, to hesitate to attack the problem of working out new production formulas involving, to him, new variables. It is much easier and presents apparently less risk for him to ask that all concerned work harder individually in accordance with present formulas, and thereby secure the needed production. There is no question but that greater individual physical effort is possible and that it would secure greater production. But it is just as normal and reasonable for the individual worker to meet that challenge with greater reluctance than the manager meets the other challenge, especially if the individual believes that the problem can be met by better management. He feels that it is the function of management not to work out a status quo in production methods but to strive for increasing efficient methods—increasingly efficient because of better coordinations and not because of greater individual exertion. The war proved that in

extraordinary emergency the individual will give himself to the limit, and proved that that method does secure production; but it proved also that only extraordinary emergency will inspire to such effort. The individual worker now believes that the extraordinary situation is past and that it is up to managers to secure the same results. He believes that it is a function of management to so coordinate the elements and to so manage that he will inspire in each individual an unconscious impulse to a maximum effort (consistent with well-being) which he cannot resist. He insists that to have visions, try experiments and to assume risks is a phase of the function known as management. Is it not, after all, the easier solution of the problem for the manager to will intellectual effort on his part to construct better production formulas, than for him to attempt to drive the mass to greater individual effort, or to modify the behavioristic psychology of a crowd which charges him with responsibility?

THE LEVELS OF INTELLIGENCE¹

The significance of these results will be appreciated when we consider that one million seven hundred thousand drafted men in the army may be accepted as a fair sample of the population of the United States. Whatever we may determine in regard to that group of men we shall probably find applicable to the country as a whole. It is thus probable that we can find in these results, suggestions and conclusions of profound importance as bearing upon our social problems and social well being. It will be recalled that the army tests were, for the most part, group tests; that is, the men were examined in groups of fifty to three hundred. Moreover, the scale used was essentially a point scale, that is to say in what is known as the Alpha test two hundred twelve points were possibly obtainable.

We quote from the official report:

"Explanation of Letter Ratings. The rating a man earns furnishes a fairly reliable index of his ability to learn, to think quickly and accurately, to analyze a situation, to maintain a

¹ Henry Herbert Goddard. *Human Efficiency and Levels of Intelligence*. p. 23-7, 34-7, 127-8. Princeton University Press. Princeton. 1920.

state of mental alertness, and to comprehend and follow instructions. The score is little influenced by schooling. Some of the highest records have been made by men who had not completed the eighth grade. The meaning of the letter ratings is as follows:

"A. Very Superior Intelligence. This grade is ordinarily earned by only four or five per cent of a draft quota. The 'A' group is composed of men of marked intellectuality. 'A' men are of high officer type when they are also endowed with leadership and other necessary qualities.

"B. Superior Intelligence. 'B' intelligence is superior, but less exceptional than that represented by 'A.' The rating 'B' is obtained by eight to ten soldiers out of a hundred. The group contains many men of the commissioned officer type and a large amount of non-commissioned officer material.

"C plus. High Average Intelligence. This group includes about fifteen to eighteen per cent of all soldiers and contains a large amount of non-commissioned officer material with occasionally a man whose leadership and power to command fit him for commissioned rank.

"C. Average Intelligence. Includes about twenty-five per cent of soldiers. Excellent private type with a certain amount of fair non-commissioned officer material.

"C minus. Low Average Intelligence. Includes about twenty per cent. While below average in intelligence 'C-' men are usually good privates and satisfactory in work of routine nature.

"D. Inferior Intelligence. Includes about fifteen per cent of soldiers. 'D' men are likely to be fair soldiers, but are usually slow in learning and rarely go above the rank of private. They are short on initiative and so require more than the usual amount of supervision. Many of them are illiterate or foreign.

"D minus and E. Very Inferior Intelligence. This group is divided into two classes (1) 'D-' men, who are very inferior in intelligence but are considered fit for regular service; and (2) 'E' men, those whose mental inferiority justifies their recommendation for Development Battalion, special service organization, rejection, or discharge. The majority of 'D-' and 'E' men are below ten years in 'mental age.'

"The immense contrast between 'A' and 'D-' intelligence is shown by the fact that men of 'A' intelligence have the ability

to make a superior record in college or university, while 'D—' men are of such inferior mentality that they are rarely able to go beyond the third or fourth grade of the elementary school, however long they attend. In fact, most 'D—' and 'E' men are below the 'mental age' of ten years and at best are on the borderline of mental deficiency. Many of them are of the moron grade of feeble-mindedness. 'B' intelligence is capable of making an average record in college, 'C+' intelligence can not do so well, while mentality of the 'C' grade is rarely capable of finishing a high school course."

It is possible to make 212 points in the tests, and the number of points for each letter rating are as follows:

D minus, 0 to 14; D, 15-24; C minus, 25-44; C, 45-74; C plus, 75-104; B, 105-134; A, 135-212. . .

Efficiency

The facts and considerations set forth in the previous chapter enable us to restate in a new way the condition in which we find ourselves in relation to the problem of social efficiency.

Our army abroad had a well earned reputation for efficiency and no small part of the result may be attributed to the fact that the lowest ten per cent in intelligence were not sent overseas and that eighty-three per cent of the officers came from the "A" and "B" classes—superior and very superior intelligence.

There can be no question that if a similar condition prevailed in our social groups a corresponding gain in efficiency would result. As a matter of fact, not only are the "lowest ten per cent" with us, but they are unrecognized and hence are often mistaken for intelligent people and placed in responsible positions.

It is a maxim in engineering that a bridge is not stronger than its weakest part. The same is largely true of society. It must be understood however, that weakness is not determined by the size of the part but by the relation the size or strength of the part bears to the work it has to do. The big steel girder may be the weak part while the small bolt may be capable of bearing all the strain that is required of it.

Similarly, the efficiency of the human group is not so much a question of the absolute numbers of persons of high and low intelligence as it is whether each grade of intelligence is assigned a part, in the whole organization, that is within its capacity. An

intelligent man who undertakes work requiring even higher intelligence, may be as inefficient as the imbecile who undertakes work that only a moron can do.

Let us again look at our chart showing the distribution of the people according to mentality. I suppose no one will deny that this distribution based on the examination of a million, seven hundred thousand drafted men, may be applied to the entire population of the United States, not to take any larger group. Surely we cannot say that the drafted army was either more or less intelligent than those who made up the rest of the population. They must certainly be a fair sample of the whole.

Let us see what these percentages would give us. On the basis of a hundred million population, we have four and one-half million people of "A" intelligence, nine millions of "B" grade, sixteen and one-half of "C plus," twenty-five of "C," twenty of "C minus," fifteen of "D" and ten million of "D minus" and "E" mentality.

These figures are beyond human comprehension and hence are of no use except for comparison and illustration.

From the standpoint of efficiency the fundamental question is this: Does the work of the country require these numbers of people of the various grades? Is there for example, just work enough requiring thirteen, fourteen year intelligence to keep twenty-five million people busy? Is there enough work requiring "D" intelligence to keep fifteen million people busy?

Of course we have no answer. No attempt has ever been made to ascertain what grade of intelligence is required for any of the multitude of occupations. That is the next step, that follows logically from the discovery of mental levels. Moreover, it is not a difficult task, once we set ourselves about it.

If we assume that the foregoing question is to be answered in the affirmative, we are at once relieved of one tremendous problem. The supply equals the demand at least! We are however, confronted with another question which exposes a condition not so easy of adjustment. Are all the "C" people doing "C" work, "A" men "A" work, etc? We know they are not.

Manifestly here is an enormous loss of efficiency. Every time a "B" man employs himself doing "C" work society is losing. Every time a "C" man attempts to do "B" work he fails, and again society loses.

There are of course many other factors that determine—and

rightly so—what work a man does. Some of these we shall consider later.

An ideally efficient society then would be made up of the right proportion of individuals to do all the different types of work that are to be done and each man doing the work for which he is just capable. . . In this course we have tried to express our conviction that every human being reaches at some time a level of intelligence beyond which he never goes; that these levels range from the lowest or idiotic, to the highest level of genius. We have indicated without going into great detail that the number of people of relatively low intelligence is vastly greater than is generally appreciated and that this mass of low level intelligence is an enormous menace to democracy unless it is recognized and properly treated. We have tried to show that the social efficiency of a group of human beings depends upon recognizing the mental limitations of each one and of so organizing society that each person has work to do that is within his mental capacity and at the same time calls for all the ability that he possesses. . . We have pointed out that the intelligent group must do the planning and organizing for the mass, that our whole attitude toward lower grades of intelligence must be philanthropic; not the hit and miss philanthropy with which we are all too familiar but the philanthropy based upon an intelligent understanding of the mental capacity of each individual. And finally we have attempted to show that democracy is not impossible even in a group with a large mass of people of relatively low mentality, provided that there is a sufficiently large group of people of high intelligence to control the situation; and provided further, that that group has the right attitude toward those of less intelligence. That that attitude is best expressed by the one desire to make all people happy; which does not mean, as socialism is too apt to claim, that all people are to be treated alike. Children are not to be made happy by placing them in the same level as adults. Even in democracy where every person has the right to vote for those who shall rule him, the masses will vote for the best and most intelligent if they are made to feel that these same intelligent people have the welfare of the masses at heart. The only way to demonstrate that, is for the intelligent to understand the mental levels of the unintelligent, or those of low intelligence, and to so organize the work of the world that every man is doing such work and bearing such responsibility as his mental level warrants.

SUCCESSFUL APPLICATIONS OF PSYCHOLOGICAL PRINCIPLES¹

We do not have to theorize as to what a modern plant and its management should stand for. The facts are ready to hand. Here and there throughout the country, examples of sound and successful practice in industrial relations within a plant can be observed with profit to the observer. And the number of such examples is growing day by day.

Take two such well-known instances of organized right relations as the system followed by Hart, Schaffner and Marx and the International Harvester Company. In the former case, there has been peace and profitable production for years in spite of conditions in the garment industry which constantly work against stability. In the second instance, the Harvester people, after a long and well-prepared campaign, recently put into operation a plan for industrial representation of its employees among the twenty plants based on the most enlightened principles of labor relationships.

The truth is that managers and men have, in reality, a common goal before them. But they have been at odds as to the best way of reaching that goal. And because they have been differing in this way, they have naturally lost sight of the big fact that it was a common goal which both were really seeking.

What is that goal? It is to get the maximum satisfaction and return from the work. Anxiety, uncertainty, discontent—these things are the chief foes of fitness. Efficiency, we must remind ourselves over and over again, is more of a psychological than it is a mechanical result.

The management which recognizes this axiom holds the key to unlimited success. Where work is sheer monotony and nothing is done to offset it, where surroundings pull down health and strength, or where relationships are such that no man feels that he has any stake in the plant and that the scrap-heap is ahead of him so far as any concern on the part of the management is felt; in all these circumstances we have the fertile soil for ill will and poor work. There can be no real organization here.

Management has sometimes lost sight of the goal which it

¹ A. Lincoln Filene. *The Key to Successful Industrial Management*. Annals of the American Academy. September, 1919. p. 8-11.

has in common with labor. It has been blinded perhaps by a narrow point of view, a rigid devotion to rule of thumb, and indifference to the greatest factor in production—the human factor. Income without satisfaction in work means labor instability, unrest and lowered output. And satisfaction in work is hardly possible without recognition by management of the human elements involved. Like all other human beings, the worker is a bundle of instincts. He wants to create, to possess, to gain power, to have his work and merit properly recognized, to play, to protect himself and his own. He wants to learn new things, to vary his occupation so that it does not get on his nerves. He wants the satisfactions which make life worth living.

Now the basic conditions for the output to which both labor and capital are committed and out of which alone they can draw their upkeep are those which make the best return possible consistent with business soundness. Wages should be the highest and not the lowest that conditions warrant.² There should be give and take on both sides. [The men should feel that they never ask for justice or fair dealing—these should come to them as a matter of course, because the business is so organized that it could not do otherwise.

Employment should cease to be a gamble and should hold out a future for those who mean to stay and make good.] This means that the best thought of the employer must be given to eliminating the evils of irregular employment, and to offering incentives which help make labor contented and stable. Some employers are reducing the seasonal character of their business by inducing their customers to order goods enough in advance so as to spread production over a longer period; they are carrying on campaigns for the standardization of styles so as to be able to carry on production throughout the year; they are constantly studying methods of producing different lines of goods so that in slack periods they may be able to keep their working forces profitably employed.

Among other methods of changing employment from an affair of chance to a carefully planned function of management we find the increasing interest and attention given to the problems of hiring, placing, training and retaining workers through well organized employment departments in charge of capable executives who are thoroughly familiar with the problems of personnel and employment and are open-minded on the many difficult questions which confront industry today. Through the

modern employment department we find it possible to secure a better class of workers, to place them more advantageously to themselves and to the management, to offer workers a clearing house for possible grievances and their adjustment, to get closer to the workers and their problems. The expensive turnover of labor is more easily reduced where such a department exists, because it can study the reasons for such turnover in detail and point out the remedies. Instead of the reckless hiring and firing of workers we find substituted the careful study of how to conserve labor so that it will pay adequately for the investment in it.

[The contact between management and men should be such as to give all concerned a feeling of security in the motives of each.] All the cards must be laid on the table. [Each side must help the other with its viewpoint, knowledge and skill. This comes only when frankness and mutuality govern. And this frankness and mutuality must be part of the written policy of the management, specific, concrete, detailed, so that all may know that they are working under a control of principles rather than of individuals. One of the great causes of industrial unrest has been the fundamental misunderstanding and mistrust of one another by employer and employed.] The modern industrial plant seeks to remove this mutual mistrust by the establishment of a clearly defined labor policy worked out with the representatives of the workers in the plant; such policy forming the basis of the employment contract, implied in the conduct of the employer, or expressly agreed to in some form of collective bargaining.

The newest development in establishment of right relations between management and men is the shop committee modelled more or less on the plan worked out in England by the Whitley Committee. Already many employers are taking advantage of this method of meeting their employees on common ground for discussion and actions on matters of mutual interest and benefit. Such committees, to be successful, must be taken into the full confidence of the employer and given a real share in the management of the enterprise. The mistake is being made of labelling some schemes "industrial democracy" when democracy is conspicuous by its absence and the whole thing is a shallow attempt which really defeats the demands of the workers for participation in management.

Many people have to learn, and not a few do so only after

very costly and bitter experience, that it is better to be genuine than spectacular. Workers are never deceived by make-believe industrial relation schemes. They respect the man who is honest, even though badly mistaken, in his industrial outlook. But they reward all insincerity with lasting contempt, disguised though it may be.

There is great opportunity ahead for every business and industry to take steps forward in bettering relationships within the establishment. Many a big figure in the management world considers it a high privilege to have a hand in such work. That is an encouraging sign of the times. There is no panacea, no patent drug, for making all things right within a plant. But this may be safely asserted: the key to success in management is organized and sustained effort on the part of all executives to approach a condition of mutual trust and mutual effort between the parties engaged in carrying on the industries of the country.

THE BASIS OF SCIENTIFIC MANAGEMENT ¹

Given two establishments in the same industry, in the same locality, build for them the same buildings, equip them with the same machinery and establish for them similar methods of handling equipment and materials—yet, in the course of a short time, there will be a difference in both the quality and the quantity of their output. This difference in result will be caused by the difference between the two in the quality of their personnel. For this reason, alone, the question of personnel must ultimately be considered the real problem of management.

If one of the above plants were headed by a management of the ordinary or traditional type and the other by a management which fully realized the importance of personnel and had developed an active philosophy tending toward the solution of the personal problem, the difference in practical results would be so great as to be unbelievable by the uninitiated. In fact, this difference alone would often spell failure in the one case and success in the other.

The managers of both plants would see the shortsightedness

¹ Richard A. Feiss. *Personal Relationship as a Basis of Scientific Management*. *Annals of the American Academy*. May, 1916. p. 27-56.

of letting buildings and other equipment run down for lack of upkeep and repair. Both would see the value of and put into practice means for running the machinery at the most efficient speeds and bringing into use the best tools and the best method of handling material. It would be taken for granted by both that anything that goes to the improvement and upkeep of these things would be a necessary expenditure or a wise investment. The ordinary management, however, would not think of applying the same laws of upkeep and improvement to the personal equipment.

The ordinary or unscientific manager believes that factory management consists of the handling of orders, materials, and machinery, and that the men in the plant are a mere adjunct to these things—a necessary evil. When this type of manager is confronted with the fact that his organization is less efficient than another he will lay the blame on his employees and say, "I haven't the same kind of people that the other fellow has." In making this statement he will be absolutely correct, but he does not realize that the fellow with the other point of view has developed a particular kind of people as an essential part of the responsibility of management.

The old type of management would at the best consider expenditures for the development of personnel as an unnecessary outlay forced upon it by unintelligent public opinion, or would consider it a politic expenditure which would bring a certain amount of cheap advertising at the expense of fair wages. The enlightened, or scientific type of management would consider expenditures of this kind not only wise, but also an investment bringing proportionately larger and more permanent returns than all other kinds. Full value of all expenditures or investments for upkeep and improvement of a plant can be realized only when sufficient investment of both time and money has been made for the purpose of improvement and upkeep of the personal side. In fact, the management which has the correct viewpoint will find that the mechanical and material side of the organization will be better developed as a necessary incident to personal development than it would be where this point of view is reversed. This is well illustrated in the Cloth-craft Shops of The Joseph & Feiss Company, where this philosophy has been the basis of its development of scientific management.

Only actual comparison of the mechanical and other developments in this establishment with those in the next best establishment in the men's clothing industry would suffice to prove this point. The industry generally is not in a very advanced state. The usual type of management is, at the best, only beginning to realize the existence of the personal side. As a result, machinery and equipment are almost universally limited to a few undeveloped or semi-developed types, regardless of whether or not they are most suitable for the purpose in the hands of the individual operator. In practically all these factories you will find only a few types of machines, and these set up and equipped as they come from the manufacturers and running at haphazard speeds. Shears and all other tools are any which the employee chooses to furnish for himself.

In the Clothcraft Shops, working from the personal point of view, tools are not only developed and prescribed with regard to their suitability for the purpose of individual accomplishment, but all tools are furnished and maintained by the management. Fully fifty per cent of the different types of machines in use at the Clothcraft Shops are not, as far as is known, used in any other establishment in the industry, and practically every machine in use has been developed so as to be specially adapted for its particular purpose in the hands of the individual who uses it. In like manner the proper handling of materials and the installation of other methods developed under scientific management have been introduced in this establishment as necessary steps in the development of the highest efficiency of the individual.

We believe the point of view outlined above to be the essence of scientific management. Scientific management aims directly at increasing the quality and quantity of the output of an organization by increasing the quality and quantity of the output of the individual worker. While scientific management in its application must necessarily go deeply into the question of improved machinery and equipment, and while this in itself makes for greater output, nevertheless, a machine is a tool, and, like any other tool, is devised to increase the efficiency of the individual to whose direct and personal control it must always be subject. The question of quality, even in the case where highly developed machinery is used, is almost entirely a question of the personal element. As for the question of quantity, the real measure of

accomplishment is not output per machine or per tool, but output per man.

Scientific management will not have completed its mission when it has determined in each industry the best method of handling materials and equipment in relation to workers, but when it has determined also the principles which underly correct methods of handling men. It is the purpose of this paper to show what is being done from this point of view at the Clothcraft Shops with the purpose of showing what a little effort in the right direction can accomplish. A further purpose of this paper is to bring to the attention of those interested in the future of scientific management the degree to which management is, in the final analysis, the handling of men and to emphasize that scientific management is scientific only in so far as it recognizes this fact. . .

One of the most important functions of the employment and service department is to develop organization spirit and free expression of personal and public opinion. It forms a direct channel of expression from its source to the ear of the management. In fact, the chief purpose of a scientifically organized department is nothing more than the development of that intimate personal contact so necessary to management. At the Clothcraft Shops about one-fifth of the total number of employees come daily in contact with the employment and service department. All cases where direct contact with the management would be beneficial are immediately referred to it. This requires constant daily contact of the management with the department, and brings it into intimate relationship with a great many more cases than would be possible in the average organization of much smaller size. Wherever the management assumes the policy of the closed door, this department may well be shut down. ✓

Results cannot be accomplished in the spirit of charity, but must emanate entirely from a sense of justice. It must be understood that work along the lines described above can never take the place of wages. Such work must have as a reason for its existence not only increased efficiency, but the increased reward to which increased efficiency is entitled. Figure 6 is a chart showing the progress of the Clothcraft Shops in respect to wages and efficiency for June, 1910, to January, 1915. This shows during this period an increase in production of forty-two

per cent; an increase in the average individual hourly wages of forty-five per cent, weekly wages thirty-seven per cent; and a decrease in total manufacturing cost of about ten per cent. During this period the weekly working schedule was reduced from fifty-four to forty-eight hours.

It is our belief that results, such as these, are obtainable only when scientific management is scientifically applied. Scientific management will live if for no other reason than that it has faced the problem squarely and recognizes that the science of management is the science of handling men.

That scientific management is a solution of the industrial problems involving all the ethics of human relationship was recognized by no one so well as the father of scientific management himself. For proof we need only remember the four principles of scientific management¹ as propounded by Mr. Taylor, and his well-known words that the "Product of a factory is not materials, but men." The most hopeful sign of the times is the awakening public conscience in regard to the elements of success. The measure of success is no longer how much you make, but how you make it.

¹ a. The development of a true science. b. The scientific selection of the workman. c. His scientific education and development. d. Intimate friendly cooperation between the management and men.

III. BALKED INSTINCTS THE BASIS OF INDUSTRIAL DISORDERS

The reason why the instinctive nature of workers so often leads to industrial disorders is because certain of their most powerful instincts are thwarted by their industrial environment. When the instinct of workmanship is suppressed through monotonous and haphazard working conditions; when the instinct of self-assertiveness is denied expression because of arbitrary methods of management; when the herd instinct is threatened by plans for undermining the unity of groups of workers; and when other instincts are balked in similar ways, the basic psychological energies of the worker are thwarted. The results are found in unrest, restriction of production, ill-will, radicalism, inefficiency, unhappiness and disloyalty. These are the outlets for the energies within balked instincts.

Business executives who have applied psychological principles to the solution of such problems have found that the repression of the basic instincts of the workers is not only unnecessary but is one of the most costly, blind and dangerous phenomena of present day industry. All of these instinctive energies are capable of either good or bad expression, and if the good expression is not provided for in the day's work, the bad expression is the natural alternative. Balked instincts insure pug-nacity, uneasiness, discontent, strikes, agitation, sabotage and the whole retinue of industrial disorders.

A COMPREHENSIVE DESCRIPTION OF UNDERLYING CAUSES¹

The instincts and their emotions, coupled with the obedient body, lay down in scientific and exact description the motives which must and will determine human conduct. If a physical

¹ Carleton H. Parker. *The Casual Laborer and Other Essays*. p. 161, 162, 164. Harcourt, Brace and Howe. New York. 1920.

environment set itself against the expression of these instinct motives, the human organism is fully and efficiently prepared for a tenacious and destructive revolt against this environment; and if the antagonism persist, the organism is ready to destroy itself and disappear as a species if it fail of a psychical mutation which would make the perverted order endurable.

Even if labor-class children evade those repressive deportment traditions that characterize the life of the middle-class young, at a later date in the life of these working-class members certain powerful forces in their environment, though they work on the less susceptible and less plastic natures of mature individuals, produce obsessions and thwartings which function at times, exclusively almost, in determining the behavior of great classes of the industrial population. The powerful forces of the working-class environment which thwart and balk instinct expression are suggested in the phrases "monotonous work," "dirty work," "simplified work," "mechanized work," the "servile place of labor," "insecure tenure of the job," "hire and fire," "winter unemployment," "the ever found union of the poor district with the crime district," and the "restricted district of prostitution," the "open shop," the "labor turnover," "poverty," the "bread lines," the "scrap heap," "destitution." If we postulate some sixteen instinct unit characters which are present under the laborer's blouse and insistently demand the same gratification that is, with painful care, planned for the college student, in just what kind of perverted compensations must a laborer indulge to make endurable his existence? A western hobo tries in a more or less frenzied way to compensate for a general all-embracing thwarting of his nature by a wonderful concentration of sublimation activities on the wander instinct. The monotony, indignity, dirt, and sexual apologies of, for instance, the unskilled worker's life bring their definite fixations, their definite irrational, inferiority obsessions.

The balked laborer here follows one of the two described lines of conduct: First, he either weakens, becomes inefficient, drifts away, loses interest in the quality of his work, drinks, deserts his family; or secondly, he indulges in a true to type inferiority compensation, and in order to dignify himself, to eliminate for himself his inferiority in his own eyes, he strikes or brings on a strike; he commits violence, or he stays on the job and injures machinery, or mutilates the materials. He is fit food

for dynamite conspiracies. He is ready to make sabotage a part of his regular habit scheme. His condition is one of mental stress and unfocused psychic unrest, and could in all accuracy be called a definite industrial psychosis. He is neither wilful nor responsible, he is suffering from a stereotyped mental disease.

If one leaves the strata of unskilled labor and investigates the higher economic classes, he finds parallel conditions. There is a profound unrest and strong migratory tendency among department-store employees. One New York store with less than three thousand employees has thirteen thousand pass through its employ in a year. Since the establishment in American life of big business with its extensive efficiency systems, its order and dehumanized discipline, its caste system, as it were, there has developed among its highly paid men a persistent unrest, a dissatisfaction and decay of morale which is so noticeable and costly that it has received repeated attention. Even the conventional competitive efficiency of American business is in grave question. I suggest that this unrest is a true psychosis, a definite mental unbalance, an efficiency psychosis, as it were, and has its definite psychic antecedents; and that our present moralizing and guess-solutions are both hopeless and ludicrous.

THE BASIC PRINCIPLE ¹

In our time the coming of the Great Society has created an environment in which, for most of us, neither our instinctive nor our intelligent dispositions find it easy to discover their most useful stimuli. Any one who desires to appreciate this should visit one of those "casual labour" quarters in London, where modern civilization has so disastrously failed, and where the facts of life are hidden neither by conventional manners nor by the privacy which is possible in the great half-empty houses of the well-to-do. Stay there, walking and watching, from the afternoon closing of the schools till the return home of the men. Look at the windows of the newsagents and tobacconists, and the frank display in the dingy little chemists' shops. Listen to the women coming out of the "off-license" grocery, and the

¹ Graham Wallas. *The Great Society*. p. 62-8. Published by The Macmillan Company. 1920. Reprinted by permission.

girls who are waiting to enter the music-halls and the cinematograph theaters. Notice what part of the evening paper the men are reading.

The people round you are of all ages from infancy to dotage; and you can see what it is that here stimulates the instincts which one by one appear in the growth of a human being. The babies are tugging at dirty india-rubber teats. The sweet shops are selling hundredweights of bright-coloured stuff, which excite the appetite of the children without nourishing their bodies. That pale-faced boy first knew love, not when he looked at a girl whom later he might marry, but when a dirty picture post-card caught his eye or he watched a suggestive film. His dreams of heroism are satisfied by halfpenny romances, half criminal and half absurd. Loyalty and comradeship mean sticking to his street gang; and the joy of constructive work means the money which he can get for riding behind a van or running messages.

The men are never far removed from the two great social forces of gambling and alcohol. If the desire of change, of risk, of achievement comes on, then the bookmaker is always round the corner; and the publican will give at any moment, for a few pence, that dreaming reverie, that sense of the tremendous significance of the world, which led their ancestors, sitting at the tent door or among the mountain sheep, to the beginnings of philosophy and science. And because the new facts by which our dispositions are now stimulated are only inexact substitutes for the old facts by which they were stimulated during the long process of evolution, the stimulation itself is weak and capricious. Even the enthusiasm of the group at the public-house door, who are discussing a glove-fight, seems, as you watch them, to be thin and half-hearted.

A little farther on the street widens, because a hundred years ago it used to cross a village green. You hear a tired and springless hymn-tune, and stop while a Salvation Army preacher shouts a quotation from St. Paul:

"If ye live after the flesh, ye shall die; but if ye through the Spirit do mortify the deeds of the body, ye shall live."

He is imploring his scanty following of women and children, and the few inattentive passers-by, to strive and pray till all those instincts which can be put to such evil use have been killed out of their souls. You remember as you listen that in the tall tenement-building behind you, or in the new brick suburb

a mile or two away, there are thousands of men and women who are making perhaps the most heroic effort to "mortify the deeds of the body" that ever has been attempted. They are mainly impelled, not by the theology of Blood and Fire, but by an intense longing to be "respectable," to have some meaning and dignity in their own lives and those of their children, to be rid of the hopeless yielding to temptation, the weak shame, the squalor and disease of the life from which they have so hardly escaped. Neither father nor mother spend a halfpenny or a half hour without calculation, the children are carefully dressed in clothes which they dare not spoil, and are strictly confined, except for occasional holidays, to house or school. And yet in a poor district the school medical officer may report that the children of the more respectable families are physically and nervously in a worse condition than the rest.

For we cannot in St. Paul's sense "mortify" our dispositions. If they are not stimulated, they do not therefore die, nor is the human being what he would be if they had never existed. If we leave unstimulated, or, to use a shorter term, if we "balk" any one of our main dispositions, curiosity, property, trial and error, sex, and the rest, we produce in ourselves a state of nervous strain. It may be desirable in any particular case of conduct that we should do so, but we ought to know what we are doing.

The baulking of each disposition produces its own type of strain; but the distinctions between the types are, so far, unnamed and unrecognized, and a trained psychologist would do a real service to civilized life if he would carefully observe and describe them.

One peculiarity of the state of "balked disposition" is that it is extremely difficult for the sufferer to find his own way out of it. The stimulus must come from outside. When once he is "dull" or "flat" or "sick of things" or whatever the name may be which he gives to his feelings, he cannot, unless he is a man of quite exceptional resource and nervous elasticity, invent anything to do which will "stimulate" him. Now, for instance, that the European nations keep hundreds of thousands of men under arms in time of peace, the colonels of regiments and the captains of warships know by experience that their men become "fidgetty" or "fed up" by a life which gives play only to a few dispositions; and when that occurs they prescribe

in a haphazard way a smoking concert, or a route march, or a football match, or, on board ship, a dance, or clothes-mending, or gun drill, for them all alike. A skilled London hostess is more successful when she goes round a room full of bored celebrities, applying to each an appropriate stimulus: "Miss Jones so wants to know about your last voyage," or, "here is a friend of Mr. Brown" (a scientific opponent), or, more simply, "I want to introduce you to that girl with the beautiful hair," until each is roused to that "energy of the soul" which is Aristotle's definition of happiness. If one looks at a respectable crowd in a London park on the afternoon of a Bank holiday, one feels an intense longing for the appearance of a thousand such hostesses and of a social system which would enable them to get to work.

This want of harmony, in great things and in small, between our race and its environment has been noticed ever since men, at the beginning of civilization, began consciously to reflect upon their way of living. They dimly felt that their earliest instincts were related to an open-air life in which their ancestors had supported themselves on the gifts of the untilled land. Such a life was "natural," and poets, for thousands of years, have longed to return to it, to recall the "golden age" before the invention of fire, or the Garden of Eden, whose inhabitants knew neither clothing nor agriculture.

It was the supreme achievement of the Greek intellect to substitute for this vain longing a new conception of nature. To Aristotle, as to Hobbes, it was evident that the old life in which man, without the powers which civilization gave him, faced an untamed world, must have been "poor, nasty, brutish and short." It was true that man's nature and his environment were at war, but the remedy was not to go back to the forests of the past, but to invent the city of the future, the material and social organization which should contrive a new harmony, higher because it was deliberate. When Aristotle said "Man is an animal adapted for living in a city-state," he meant, not that man was living in such a state when Zeus was born, but that the city-state stimulated his nature to its noblest expression. "For what every being is in its perfect condition, that certainly is the nature of that being." Even for Zeno's less confident philosophy "Follow nature" meant not "Go back to the past" but "Examine the conditions of a good life in the present."

This is the master-task of civilized mankind. They will fail in it again and again, partly for lack of inventive power, partly from sheer ignorance of the less obvious facts of their material surroundings and mental structure. But it is hardly possible for any one to endure life who does not believe that they will succeed in producing a harmony between themselves and their environment far deeper and wider than anything which we can see today.

THE BALKED INSTINCT OF CONTRIVANCE¹

I have mentioned that among the marks of a true instinct is universality of occurrence. That of contrivance is verified by the test. Extraordinary as it is in some individuals, it is present in all. In the average man it perhaps should be called an instinct of construction rather than one of contrivance. Every one of us is conscious of a satisfaction in doing his work handily and well, in seeing the product grow under his own hands.

Hence we find this instinct actuating the business man as well as the inventor and mechanic. The complexity of the impulses and motives which underlie business activity will form the special topic of the following chapters; here I anticipate for a moment what might as appropriately be said there, concerning the influence of the instinct of contrivance on the active man of affairs. This sort of person likes to see his enterprise well conducted; and the enjoyment is quite apart from the money-making outcome. As with other instincts, that of contrivance is felt in varying force by different individuals. There are not many with whom it would be as strong as with a manufacturer who once assured me (in perfect good faith, I am convinced) that the chief satisfaction which he got from his establishment was the feeling that it was in the best order and at the height of efficiency,—shipshape from top to bottom. But the immense majority would confess to some feeling of intrinsic pleasure in having a well-equipped plant, a first-rate organization. I mention organization as well as plant, because the modern business man is commonly concerned with the former not less than the latter. . .

¹ F. W. Taussig, *Inventors and Money-makers*, p. 57-70. Published by The Macmillan Company. New York. 1915. Reprinted by permission.

Much more important, however, is the influence of the instinct of contrivance on the employees. It is more important as concerns the problem of happiness, simply because of the immense numerical preponderance of the employees over employers. There is a clear difference between the two classes as regards the scope given to this bent in their work. The capitalistic organization of industry, large-scale production, hired labor, and the wage system,—these may serve to add to the employer's intrinsic satisfaction from his daily work, or at least to entail no loss of satisfaction; but they seem to lessen seriously the possibilities of a life of spontaneous activity and of sustained happiness for the manual workmen who form the great body of employees.

Just how far the development of quasi-automatic machinery runs counter to this factor in well-being is not easy to say. Probably the charge often urged, that it takes all the interest and savor out of the day's work, is exaggerated; or at least there is exaggeration in the assertion that the industrial system is in this regard radically worse than it was before the era of the machine. The handicraftsman's labor, like that of the tender of a machine, often involves repetition and monotony. Moreover, a vast amount of dreary heavy labor has been taken over by the machinery. The modern sawmill is better than the old saw pit; the planning mill better than the old jack plane. There is truth also in the observation that monotony is by no means equally distasteful to all. Men vary in this regard, as in every other; and the simple repetition of identical movements is not necessarily a cause of weariness and abhorrence to those of inert mind and tranquil disposition.

Yet it remains true that there is a difference of degree between the tool and the machine; a lessened scope for individual initiative and individual impress, and so a lessened opportunity for the satisfaction of an instinct like that of contrivance. True, the expert mechanics needed by modern industry—a considerable part of the labor force, even though not a large proportion—may still be in the way of experiencing some such satisfaction. Among the rank and file of factory operatives, also, the possibility is not completely excluded; machines, however perfect, depend in some degree on the operative's care and skill. Yet in general the minute partition of labor, the extreme differentiation of machinery, the constant effort to

achieve automatic start and check and action, the tendency to reduce the worker to a mere feeder and watcher,—all these mean a loss in interest, in possible variety, in the exercise of skill and contrivance. The skilled mechanics themselves, whose work tends to be turned to the construction and repair and oversight of machinery are often tenders and users of machine tools which, though extraordinarily ingenious and effective, are quasi-automatic. Surveying the situation as a whole, the decline of the handicraft, though it does not necessarily mean a less demand on the intelligence and skill of the workmen, means less opportunity for individual adaptation and workmanship. Against the clear gain in quantitative output from machine industry so much emphasized in economic literature, must be set some loss, even though not an unqualified loss, as regards the scope and the work itself. . .

Again: the instinct of contrivance in the business man himself, and the ready vent which is given by nature of his own work, go far to explain his inability to understand, his unwillingness to tolerate, the restrictive policy which so often runs counter to it among the employees. The position of the employer obviously is just the opposite from that of the men. In his case all the surrounding circumstances tend to foster and strengthen the contriving impulse, whereas among the men the accepted methods of bargaining tend to push it aside and smother it. Not only the employer's calculations of gain, which are doubtless uppermost in his thoughts, but the inborn bent of which he is only half-conscious, impel him to bring his operations to the utmost pitch of efficiency. His own satisfaction from proper contriving makes him feel irritation, even wrath, when his men limit their tasks, hold aloof from labor-saving appliances, prevent the well-designed organization and plant from turning out the maximum. This cause of friction is the more likely to issue in contention because neither participant understands the other's point of view; nay, neither understands his own. The employer declares that the men are foolish, ignorant, act against their own interests, still more against the interests of the public. He is quite alive to the fact (though he may not overtly lay stress on it) that their restrictive policy also interferes with his money-making. But he is probably not at all conscious that his interest in the money-making policy is supplemented by his own instinct of contrivance. The men

on their part are as little aware that they are opposing something more than the mere business plans of the employer, and equally little aware of causing in themselves a similar sort of thwarting.

THE INDUSTRIAL WASTE DUE TO BALKED HUMAN NATURE¹

To the question, what is the matter with the men, the writer received varied answers. For example:

From an employer: The men are too lazy to work; our laws, courts and police institutions are weak as regards loafing, begging and stealing; and the charity organizations in the cities demoralize rather than uplift the men, by providing them with meals and shelter without labor.

From a charity worker; Yes, the men are falling down-and-out in a greater number than ever before. For this the hard and unhealthy conditions at the work places are responsible to a degree, but, in the main, the men themselves are defective and responsible for their misfortunes. Some inherit certain defects by birth, but the vast majority have acquired bad habits, have weakened their bodies, and have lost ambition, will-power and self-respect.

From a preacher: The fountain head of the trouble consists in the fact that the men have lost religion; if they would turn back to God, everything else with them would be all right.

From a radical labor leader, socialist, I.W.W., or union man: The existing industrial conditions, low wages, long hours, poor living, etc., are responsible for the casualization of laborers and the production of hoboos and tramps. There is nothing wrong with the men themselves; do away with these conditions and with the wage-system in general, and there would be no more down-and-outs the product of industrial slavery.

From an educator: The main cause of casualization is the lack of training in general character building and in trade.

From a moralist: The main cause is drinking and prostitution—saloons and red-light districts.

From a student of industrial problems: For the casualization

¹ Peter A. Speck. The Psychology of Floating Workers. *Annals of the American Academy*. January, 1917. p. 75-8.

of laborers a number of causes are responsible; rapid introduction of skill-replacing machinery and other improvements in the technique of production; seasonable character of numbers of large industries; fluctuation of market; irregularity of employment; unregulated transportation of laborers; and pressure of circumstances and environment in general. The existence of casual laborers in large numbers is an essential of the present organization of our industrial system.

These widely varied opinions about the causes of casualization show the complexity of the problem. . .

One of the first signs of the decrease in the ambition and hope of a worker is the loss of interest in his earnings. He soon quits saving for two reasons: first, all of his previous attempts in saving failed because the hard times of unemployment, or illness, or some other misfortune ate up his savings; and, second, he begins to look upon his earnings as merely a means "to keep his soul and body together," not as a means for his success in life. In consequence he begins to work seasonally and casually. First, industries require that kind of work, and second, seasonal and casual work corresponds to his changes, views and needs. These changes, views and needs are his desire to be on the move, and the need to earn only a "stake," a certain sum of money, specified in his own mind at the acceptance of the job. This stake is destined to help him to prosecute his immediate plans, to buy clothes and shoes, to have a "good time," to buy meals on his travels, or what not. But the main thing is, he must move; he must change his environment so as to see something new, interesting. To this end he has always a plan in his mind—where to go and how to go.

But when the last rays of his ambition and hope are gone he becomes a self-confessed failure and falls down, first, into the rank of hoboes—still laborers—and then into the rank of down-and-outs.

In the latter state he is characterized by the following psychological features:

- (a) The passion for wandering is increased almost to madness;
- (b) He has acquired a profound aversion to work;
- (c) He drinks whenever and wherever he has a chance;
- (d) He has developed a strange, childish expectation that he may strike in some way, somewhere, a tremendously promis-

ing opportunity. This is something like the alluring dream of a rich gold strike to a prospector. If this hoped-for opportunity were such that its realization might reasonably be expected, it would recreate in him a strong enthusiasm and confidence, as a result of which he would cease drinking, and would work and battle till he won out and became a victor in life instead of a beaten man. But if one asks him of what nature is the opportunity he expects to find, he answers that it may happen that he will by chance become a prospector and strike a gold mine; or marry rich; or he may become a fisherman, at first for wages, afterwards independently; or he may find a very good job, working on which he will save lots of money; or he may specialize in some line of highly paid work; or he may by chance secure a homestead; or—or—

Led by such faint hope—very faint, almost nothing in his mind, but strong enough in his sentiment—he roams restlessly over all the country, from north to south, from coast to coast, back and forth, moving from place to place by freighting or walking, seldom paying his way in his rainbow chasing.

(e) He has lost his ability to concentrate on anything sensible.

How can such psychological features, seemingly unnatural to any man, be explained? He is simply trying to escape from himself or to forget himself, in general. Life is dark and hopeless for him—nothing is left of his ambition, except gloomy thoughts and sad feelings.

Wonderful human nature invents other, one might say in common parlance, “artificial” substitutes for “natural” enjoyment appearing in ambition and hope. By changing environment—scenes—by constant wandering, he keeps up some sort of interest in life.

He is averse to work because his nervous system, by suffering and privation, is exhausted. Furthermore, he answers to the question why he does not want to labor: To labor! Why should I labor? I have labored, worked hard—years, tens of years, but the labor did not help, it let me fall down where I am as you see me.

But in general his idleness or “laziness” is nothing more or less than a kind of defence-reaction forced upon him by nature. In drunkenness he also finds a sort of “brightness” and forgetfulness. Rainbow chasing is again an artificial means of

making his life "ambitious" and "hopeful." His lack of ability to concentrate his attention on anything is explained by the fact that he is worn-out and as a result his will-power has gone to pieces.

No law, court, police, prison, can "cure" him; nothing but medical treatment. But as medical treatment is more costly than the prevention of disease, the nation should take steps in the direction of preventing a large number of its members from falling down-and-out, beginning with the regulation of labor conditions in unskilled industries, especially in those of seasonal character.

THE "PASSIVE RESISTANCE OF THE HUMAN SPIRIT"¹

Dean Inge says: "The life of the town artisan who works in a factory is a life to which the human organism has not adapted itself." The deracinated life of the human herd in modern towns is the condition and the instrument of large-scale industry. A speeded-up machine production, whose products do not bring a good life to those producing them, carries the germ of its own decay. "A barbaric civilization, built on blind impulse and ambition, should fear to awaken a deeper detestation than could ever be aroused by those more beautiful tyrannies, chivalrous or religious, against which past revolutions have been directed."

Human nature in industry has gone on strike. The decayed autocracy of financiers and business men cannot be restored by "profit-sharing" and "co-partnership." The revolt is not against details. It is against the purpose, products, methods, and conditions of industry. The workers do not want the "wants" that fill modern life, the splatter of the shops. Sections of them have proved this by knocking off work for a day (or even two days) a week, when they attain a moderate standard of living—the level which Professor Zimmern defined to me as one of "reasonable satisfaction."

Something in the industrial system offended the soul of the worker. He resented the forced draught that played on his working day. He saw "an immense accumulation of the

¹ Arthur Gleason, *What the Workers Want*. p. 256-7. Harcourt, Brace and Howe. New York. 1920.

apparatus of life, without any corresponding elevation in moral standards," creating a civilization of "technical efficiency without love."

There came a moment when Napoleon's soldiers tired of the grandiose and expanding campaigns of conquest. The motives that had driven them wore thin. So it is with the workers. The familiar compulsions no longer avail, the industrial organization crumbles, and the mines and railways and factories become a wasting asset. Militant strikes can be crushed by tanks and machine guns. But against the passive resistance of the human spirit in the millions of workers the owners make war in vain. It is a process of nature, a molecular change, invisible and universal. This life-force can be re-enlisted only on its own terms.

AN ACCOUNT OF LABOR ASPIRATIONS¹

In addition to giving him an agency for the defense of his rights, the union gives the workman a medium of gaining knowledge about the industry of which he is a part. The worker is no longer a blind cog in a massive machine. He knows something of the whole problem. And the more he knows of the whole problem the more valuable he is to the industry.

It is at this point that industrial scientists may be of tremendous service. They can take the information of industry and give it to the worker for his enlightenment and for the quickening of his interest in the industry. The normal human mind craves information; it fights against darkness and in time loses interest in a darkness unilluminated.

Repetitive operations especially demand the attentions of scientists. How much havoc needlessly repetitive processes have caused will never be known. What a mass of suppressed resentment and hatred there is among workers who must submit to them can never be known. We only know that here and there a suicide results, a maniac results, a broken home results. For such of these processes as are imperative there should be all of the surrounding enlightenment that science can give. Men, for one thing, are entitled to knowledge as to the purpose of their work, as to where it fits in the great scheme of things.

¹ Samuel Gompers. *Union Labor and the Enlightened Employer*. Industrial Management. April 1, 1921. p. 239.

It is just to demand that workers know the facts about costs, about supplies, their source and the reliability of future supply, about overhead and operating costs and about where their product goes and why it goes there. Science, if it will, may weave romance into many a dead and dusty corner of industry, into many a weary, heavy life. The coming of steam took out of the life of labor that which made it full and rounded, that which made it a life fit for human beings, taxing and rewarding the skill of hand and brain, and science must give it back.

Reaction thinks that the well-springs of human hope that manifest themselves when the workers speak for better lives and for more of freedom, can be dried up and destroyed by repressive and coercive measures. They think only as far as the iron heel. They know nothing of the psychology of masses of workers, they know nothing of the longings and hopes that fill their hearts. They plan by the ledger and monthly balance sheet.

Scientists are under no such limitations. Engineers know better. The workers, quick to detect any false note in plans involving human life and human rights, rejected with unanimity and bitterness, the original Taylor system and its allied distortions. The workers knew the fault and time has amply justified their verdict. It is now generally admitted, even by its former foremost advocates. But most scientists of industry have found the missing links and have given humanity, human rights, human aspirations and human impulses their proper place and full valuation.

THE NATURAL FORCES BEHIND SEEMINGLY UNREASONABLE BEHAVIOR ¹

In order to make it easier to think about the industrial worker, it has long been the fashion of the philosophers to describe him as the "economic man"—interested in playing his part in the process of production or distribution, more or less exclusively for the purpose of thereby earning his daily bread, and, with good luck favoring, his daily jam and cake. "All he wants is in the pay envelope," so more practical and experienced observers are apt to voice the same effort to find an all-inclusive rule of modern human action. Such a man, it goes without saying,

¹ Whiting Williams. *What's on the Worker's Mind.* p. 293-308. Charles Scribner's Sons. New York. 1920.

will have only an incidental interest in the nature, the hours, or other conditions of his work, or the character of his foreman, or his company, so long as he takes out of the plant enough money wherewith to buy in the remaining hours of his day the satisfaction of his real desires as a person among other persons.

This explanation of the mainspring of men's doings is highly popular. To my great surprise I found it used quite as much by the worker for the explanation of his employer's behavior and especially his misbehavior, as by the employer for the understanding of the worker's comings and shortcomings. But something must surely be wrong with a mainspring whose effectiveness is so readily accepted in the case of the "other fellow" and so strenuously denied in our own. At the very least an enormous amount of proof ought to be required in order to substantiate on any universal basis a theory which no one can be found willing to admit for himself—or for any one else except the person he does not intimately know.

Of course the dilemma may be partly avoided by making the all but universal assumption that putting men into the group called Labor or Management or Capital changes them even down to the bottom of their souls where their life's motors are set upon the piers of their foundation desires. This is the way often taken to get around the need of coming to the understanding of the other person's actions by taking the time to understand him. Of such study the result is pretty sure to be the same as that which impressed itself after my months at the south pole of the industrial world—that humans vary little at the bottom of their hearts though they may vary much at the tops of their heads; that of all of us the mainsprings are just about the same, though different circumstances require different modes and methods of their escapement.

For some months I carried about the conviction of the enormous importance of the job to the wage-worker, as though it made him a very difficult and rather peculiar kind of chap—till I awoke to the realization that in this industrial era of ours the job is almost equally important to everybody else. After all there are exceedingly few of us in this country whose first concern is not our job. For almost all of us the most important part of our income, by far, comes from the carrying of some current responsibility, with serious trouble camping down very close to us the moment something goes wrong with that source.

Even the industrial captain builds up his capital quite largely to take care of himself and his family in the days when sickness or other disability puts an end to his yearly salary as the busy director of this enterprise or that. The chief dollars-and-cents difference between his job and that of the workers in his factory is that he is more likely to be hired—and paid—by the month or the year instead of by the hour, day, or week—and to have certain securities against unwarranted discharge. Upon him as upon the worker hangs always heavily the fear of lessened income as the result of sickness or death—of joblessness. His abilities and his savings lessen the fear, of course, but do not by any means eliminate it.

Most of the difference, then, consists, not in his being in the group of management, but in the size of his margin of security and safety—a margin given him by his closer connection with those who give the job—or take it away—and by the larger savings and assurances which his larger education and earnings permit. In the work of the Cleveland Welfare Federation we spent large sums trying to get the people of the city to understand that the community's poor were not a fixed group or class habitually acting from abnormal and peculiar motives and therefore habitually and permanently in need of help. It is this difference, not of human material but of educational economic margin, which permits some to save themselves while others, encountering the same obstacle of sickness or unemployment are brought down to the need of temporary help, just as a friend of mine reported: "I'm getting old. Ten years ago I could stumble and still keep going for fifteen feet at least. Now a stumble means a fall—without doubt and without delay."

The difference is in the margins of assurance, opportunity and living in general, allowed by the daily or weekly wage instead of the monthly or yearly salary—it is this that gives the reason of the labor gang's intenser and more necessitous attitude toward the job, rather than any or all supposition that the gang is made up of humans possessing different interests and therefore wanting satisfactions entirely different from the rest of us.

During the long hours of shovelling bricks, lifting the steel sheets off the cold rolls, or stencilling the "Regular weights, there now" onto the barrel heads, it was often a problem to know what to do with one's mind. On some such turns I

would definitely try to make the time go faster by picking out some particular field of recollection and endeavoring, hour after hour, to "lick the chops of memory" by recalling every impression possible, for instance, on one shift from my travels in Italy, on another turn Egypt or South America. At other times I would find myself swinging my body in rhythm with the movements of the job while almost chanting to myself: "I wonder if anybody could ever find any connection between this town's evident immoralities and some of the plant's evident dissatisfactions?" "Is there any connection between the way people earn their livings and the way they live their lives?—and if so, do bad morals cause bad jobs or bad jobs cause bad morals, or both?" As becomes a father, my fondest hope is that the following offspring of my long-turn ponderings may prove a more helpful interpreter of our modern industrial life and all its human units than that offspring of the philosophers which ought to be known as the "economic alibi."

Suppose we start at what might be called our "jumping-on" place there in the shining land of "Get-up-in-the-morning," and draw a line through the sixteen waking hours of our day to the "jumping-off" place there in a shadowy land of "Go-to-bed-at-night." Such a line we may quite properly call our "western front"—at least it represents all the opportunity we have for the putting forward of all our life's campaigns, whatever and wherever they may be. Now from all that I have seen or heard all kinds of human beings do and say, it is safe to assert that every normal person possesses at the bottom of his heart the desire to find somewhere along this front the satisfaction that comes with the consciousness of "breaking through." It is impossible to conceive of any one who would pass along this front day after day, and year after year, without getting anywhere some feeling that he is making progress—counting as something more than a cipher in the sum total of humanity—and be therewith content. Such a person is pretty sure to be proved an imbecile or a fool—or else he will be found among the unknown derelicts at the morgue.

Now, in these recent days of unrest and commotion, when fear gives birth to misunderstanding, and misunderstanding increases the brood of fear, it is easy for all of us to believe that the man who is too far off—up the line or down—for us to see and know him, will not be satisfied unless his "break-

through" brings him into the manager's or the autocrat's or the plutocrat's chair of absolute power for the domination of the rest of us. Yet acquaintance with both groups is sure to convince all as it does me that the member of the labor gang is no more truly represented as the father of such an extreme desire than is the capitalist—though such acquaintance does show that each is willing to believe the other not only capable of such a desire, but happy in it. It is immensely truer to the actuality to believe that every normal person, quite apart from his particular membership in this group or that in the industrial process, is moved to do what he does by the universal itch to feel that somewhere on his life's front he is justifying his existence among other persons by "getting on," doing a little better than merely holding on, while those about him pass along. In this feeling all of us find quite as much pleasure in beating our own previous record as in going ahead of others. The main thing is the sense of motion and progress. When the "high spots" of the "boss roller" or the "first helper" are put alongside of the successful banker's or manufacturer's it is odd to observe that they all fit into practically the same formula—each is a high spot because it serves to measure their progress from the point where they started. It is this satisfaction in the distance travelled rather than in the point arrived at, that permits millions of us to have our separate, individual satisfactions without wanting to crowd each other out of the pleasure of the same, or competing, ultimate destination. . .

Altogether, it is very fortunate that the great majority of us take much more satisfaction in passing the "flivvers" of our past, or the truck loads of our slow-moving associates, than we take dissatisfaction in the thought of the limousines still ahead of us and still unpassed on the road of life and progress. All things considered, we could hardly hope for progress from anything less selfish or for self-preservation from anything less progressive.

Now I am convinced that the daily wage-worker wants, to an even greater extent than the rest of us, to find his high spots and locate his break-through in the sector of his job. For one thing, the narrowness of the margin between the daily job and the daily bread means that what he does in the hours under the plant roof determine more narrowly what he may do elsewhere, than does the nature of our work for the rest of us; and

that is saying a great deal, for in a world built on jobs, all of us must adapt ourselves first to the conditions which we must meet for the earning of our living, and then, with what we have left of time and attitudes and interests, set about the living of our lives. If the worker is still on the long-hour day, all this can be figured out in minutes to make plain the immense necessity of getting the utmost of personal satisfactions out of his working time.

That means that the worker lives and moves and has his being there on the job. There is where the tire of his life's wheel meets the smooth or jagged roadway of actuality. But still more important than that, he finds there in the precise nature of his job, skilled or unskilled, important or unimportant, and in the relationships it provides, the most important means of establishing his status and standing as a man and a citizen—and the status and standing of his wife and children. Thus the oil-can or the wrench spells progress upward from the shovel, quite beyond the two-cents-hourly income. Thus, too, the promotion out of the gang to the humblest foremanship is certain to mean not only more money for a wider margin of enjoyments and securities, but also, and much more important, the envious congratulations of the gang, the familiar acceptance as a comrade at the hands of others heretofore far above him, and, finally, those gossiping noddings of heads at the club or the lodge which are the incense burned before the altars of progress and success. It is only the great distance of most of us from such events that permits us to miss the hugeness of these steps as they appear from the viewpoint of the labor gang. It is this hugeness that causes many workers to lose their heads—certainly, at least, the natural size of their heads—the moment they find themselves thus elevated—and so perhaps inclined to drive their former “buddies” with less consideration than that shown by those who never were in the gang.

Now in view of all this, the most fundamental criticism I know how to make, in regard to the present industrial situation, is this: that in the minds of so many members of the labor gang, and also of higher groups of workers, there is so widespread and so deep-set a conviction that for them there is no chance to break through on their industrial sector.

It must be evident to those who have read this diary that while the matter is two-sided, nevertheless, considerably more

justification than could be wished is, as a matter of fact, given that conviction. The trouble—the most manifest trouble at least—is in that “first line of defense” which is maintained there at the contact points on the line by industrial management in the person of the boss or foreman, the plant guard or policeman, and the plant paymaster and his clerks. If the break-through is to be engineered on the sector of the job, it must inevitably be in the presence, and with the permission and recognition, of one or more of these representatives of—and of parts of—the management. Through these the workers must get those daily demonstrations of the plans and purposes of all the other “lines.” There would seem to be no way by which management can avoid the responsibility for whatever impression the workers gain of its performance and intentions as the result of these demonstrations—nor any effective denial that that impression as a whole is considerably less satisfactory than could be desired.

Whether justified or not, this conviction that on this sector no satisfying feeling of gain or progress is to be made in proportion to effort required—that “pull” and the marrying of the boss’s daughter must be counted on for getting forward—produces the same result in the factory as it would on the fields of France and Flanders. When Foch or Haig became convinced—rightly or wrongly—that successful pressure could not be hoped for, strategy, and the necessity to keep moving, required, of course, the transfer of effort to another sector. So today, when the worker becomes, in any way, convinced as the result of a few deadly demonstrations, that employers as a group are unwilling or unable to reward initiative, loyalty, and skill, he changes his tactics. Leaving behind just enough energy and skill to keep “the enemy” from “breaking through” and discharging him—and he’s a wonderful judge of the precise amount needed for that purpose—he withdraws the reserves of his interests and enthusiasms for more effective and worth-while application elsewhere.

Like all the rest of us, the worker, it is worth repeating, carries into the other sectors of his living the equipment he is able to take out of his job. So here again he suffers from the narrowness of his margins. If he is untrained he must daily put a larger proportion of his entire physical equipment—in his case, his entire capital—into his daily givings for the benefit of the needed daily gettings of the family’s food than do the most of

us. Unskilled, skilled, or semi-skilled, does he make iron or steel, the chances are that he must put in an average of twelve of those sixteen waking hours—with, in most cases, an additional hour and a half or two to go and come.

The result is not favorable to such a worker's finding in, say, the sector of his home, the sought-for satisfactions of forward movement and distinction. That is certainly evident from the most casual reading of the foregoing pages.

Over in the sector of his relationships as a citizen, similarly, many a worker can take only a depleted physique and an unsatisfied hope. Some, however, do "stand the gaff" of even the hardest work and, perhaps with the help of a sense of humor or a determined will, endeavor here to find the distinction of leading those around them. I am quite sure that these are often the men whose manifest ability to influence others comes to the attention of the all too common plant detective or "under-cover man"—with the result that they may be reported as potentially dangerous workers. In too many instances such a report is likely to lead to the "planting" of, say, a bottle of whiskey in the man's clothes, with the later discovery of it by the secret planter, who in horror at such outrageous breaking of the plant rules, lands the offender on the street, jobless and sore, ready to believe that his manhood requires his personal direction of a continuous war against the industrial and economic arrangements which permit such injustice. I have reason to believe that such men are not happy in their capacity as leaders of the war—that they would be enormously happier if they could find there in the plant and on the job the opportunity to enjoy the sense of constructive leadership—which, of course, remains unattainable until the hurt that honor feels has been assuaged. It is strange that so many managers who themselves get great pleasure from their membership in some committee of the local Chamber of Commerce find it so difficult to understand the wish of some of the workers to enjoy similar distinction in their world under the plant roof.

Into the final sector of their miscellaneous relations as a person come great numbers of workers who realize their position at the base of modern industry, yet who have found nowhere else in home or club or lodge any milestone of distance travelled from the starting point of personal insignificance. Here is their final chance. Of such men their profanity, I am

persuaded, is intended to convince their hearers that they themselves remain unconvinced of the inferiority which their present job may indicate—in much the same way that a child assures you of his “I don’t care, I don’t care” when his toys are taken from him. In addition, he can hope for a certain distinction among his pals by giving the requisite attention to the luridness and daring of his blasphemies. Of such men, too, their boastings of their “fifteen, sixteen w’iskee-beer” are also calculated to impress themselves and their friends with the remarkable carrying and staying powers of their physical manliness. For many, further, the certainty with which drunken ears are able to hear the assurances of their owner’s achievements, past, present, or future, makes it worth while to indulge in the cup which congratulates as well as inebriates—congratulates because it inebriates. The old machinist who used the bartender’s dispensations to “get the feeling of my old position back like, you know,” and the melter in the western steel town for whom the “hard stuff” almost instantly recalled the days when he was discharged because “the boss knowed I knowed more’n a minute about steel than he did in a month,” as well as the hobo who used his whisky as protection against the bugs and flies—all these and others support, sorely, this proposition that the worker’s bottom-most desire is to find the chief basis of his belief in himself there in his work, and that, failing this, he endeavors in all the other parts of his living to make the necessary adjustments.

THE FUTURE OF INDUSTRY¹

Looking to the future of industry, if we want to avoid constant difficulty, constant friction, constant unrest, it is necessary that we should take account of the intellectual ferment which is working in the minds of the industrial masses. I have been interested in observing the way in which the American employer is meeting the situation. In the course of a fairly intensive investigation of American industrial methods during the last two months I have come to the conclusion that fundamentally he deals with the same problems which we have in England, though superficially there are many differences. I have

¹ B. Seebohm Rowntree. Substance of an address delivered at a dinner of Survey Associates, in New York, November 16. Reprinted from Survey. December 3, 1921. p. 362.

such an admiration for the intelligence shown by the American employer that I hope if I say any word at all in the direction of criticism it will not be regarded as dogmatic assertion of a considered judgment but merely the reflection of a passing traveler. What I find is that when he is dealing with material problems, the American employer is extraordinarily alert and scientific. He is far more on his toes—he has more “pep,” to use the American expression, than the British employer. But somehow, when he comes to deal with the human factor in industry, he seems to lose that wonderful slight-of-hand and scientific accuracy of action which marks him when he is dealing with administrative and material problems. He seems to me to descend altogether to a lower level. He does not approach, it seems to me, the human problems connected with industry with the same ability with which he approaches the material problems. I do not say that he is approaching them any less ably than we are in Britain; but whereas he is streets ahead of us in the way in which he administers his business and in the way in which he applies science to the solution of his material problems, I do not think that he is so far ahead of us in the way in which he is dealing with the human problems.

Obviously when I speak of the American employer, there are very brilliant exceptions. I have learned a great deal of how to deal with labor problems from a number of American employers. In general, however, if the American employer is kindly disposed, he seems to me to favor action which I can only describe as paternalistic. He seems to adopt the attitude: These workmen are nice fellows; I will do nice, kind things to them. His is just a little the spirit of the English squire who distributes soup and blankets to the villagers at Christmas. And so you get a good deal of welfare work. Having been the director of the Welfare Department in the Ministry of Munitions responsible for three or four thousand factories, I am not likely to belittle welfare work. But to my mind true welfare begins with the provision of working conditions which are fundamentally just in the recognition of the human rights of the workers.

There is another kind of employer whom I regard as a great danger, whether you find him in America or in England—you can find him in both countries—and that is the short-sighted person who seeks to take advantage of the present economic

and industrial situation in order to keep the worker in his place, as he expresses it—in order to get hold of the worker by the throat. He says: "During the war the worker was on top. Now I am on top and I am going to stay there as long as I possibly can." That man is a revolutionary. That man is playing into the hands of extremists; he is the greatest enemy to real progress in the state.

On the other hand, I find here, just as in England, an absence of that quiet, calm, patient, scientific inquiry into the whole industrial structure and into the causes of unrest which is the only real way of getting rid of unrest because it removes its causes. If a steel merchant is receiving ores from different parts of the country, I imagine he will find that there are certain differences in these ores and that, in order to obtain a steel of a certain quality, each variety of ore must be treated rather differently. If he wishes to manufacture a certain standard of steel, he finds that he has to make sometimes radical, sometimes slight changes in the way in which he treats different kinds of ore in order to obtain the desired result. If he gets a new kind of ore, or if a shipment of ore does not give him the reaction that he wants, he does not get in a temper with it; he does not say, "What stupid ore this is." He recognizes that it is up to him and not up to the ore so to alter and adapt his methods as to obtain the reaction that he desires. He never talks about ore "in the mass"; he talks about ore from this mine, from that mine and the other mine. His treatment is entirely scientific. But you will find that man talking about labor in the mass, attempting, for instance, to treat his Lithuanian, his German, his Pole, his Italian, his American all in the same way. And yet he expects to get a satisfactory reaction. That is quite unscientific. We employers are really a very unimaginative lot of people; we have very little vision.

We have got to tackle this problem of industrial unrest in a thoroughly calm, scientific spirit, recognizing that we are entering upon a world with a psychology different from that which existed in 1913. Men everywhere are demanding better conditions, and it is up to us to see whether we can grant them. Therefore, let us approach the problem of how to get rid of industrial unrest by a quiet examination of the causes which give rise to it and let us get rid of all pre-conceived notions; let us try to enter upon that examination just as a chemist

would enter upon the solution of some difficult chemical problem, willing to do what is necessary; first of all to diagnose the problem and, second, to make a report upon it, purely in accordance with the facts as they were found, without any prejudice.

I believe that the right action for us employers is to examine the existing condition of industry on the assumption that industry continues on its present basis. A number of people are so dissatisfied with conditions in industry as they exist today that they are devoting the whole of their efforts to attempts to alter the system of industry—to replace the capitalist system by some other. I do not think that the capitalist system of industry has ever had a really fair trial; the capitalist has always abused it. It holds in it the possibility of far better industrial conditions than have yet been obtained. The following statement of what, I think, may be regarded as the aims of industry has been written on the minutes of a board of directors in capitalistic industry in England, a board that is definitely trying to work toward the achievement of those aims.

1. Industry should create goods or provide services of such kinds, and in such measure, as may be beneficial to the community.
2. In the process of wealth production, industry should pay the greatest possible regard to the general welfare of the community, and pursue no policy detrimental to it.
3. Industry should distribute the wealth produced in such a manner as will best serve the highest ends of the community.

I believe it is possible for men engaged in capitalist industry to work conscientiously and steadily toward achievement of these aims. But the elimination of unrest must be paid for. The price may be stated under five headings: wages, hours, security, status and a share in profits.

The payment of minimum wages which will enable all men of normal ability to live in accordance with the standard suited to a civilized industrial community in the Twentieth Century comes first. America is much nearer the attainment of that object than is England. Your standard of living is higher than ours. I have learned something during the last few months as to the reasons for that. To a certain extent you are living on your capital. There are other reasons why your standard of living is higher. Your employers are better administrators, more alert than we are in England. But if the workingman once felt that the employer himself was seeking without pressure from the workers to raise his standard of wage, if that be necessary, in order to enable the workers to live in accordance with the reasonable standard, it would make an enormous difference. We

are short-sighted in always waiting for the workers to wring from us an advance in salary. We ought to know what salary is necessary to live in accordance with a decent standard. To bring salaries to that level cannot always be done in a day; it may take years of improved administration.

Hours in our factories should be only so long that the men may have a reasonable opportunity for the recreation of their vital energies and adequate expression of their personalities. Forty-eight hours is a reasonable standard and if you deviate from that either upward or downward the deviation ought to be justified by the special circumstances of the case.

The third item is the most important in this country; that we give the workers reasonable economic security. I have said that we employers have very little imagination. If we had imagination, we should have solved the problem of unemployment long ago. If we could visualize the suffering due to unemployment, the discouragement of mankind, the demoralization, the lowering of morale, we should have said long ago this evil must cease. But we regard the evil of unemployment with almost complete indifference. Occasionally we flutter into a little interest in this subject when a great crisis occurs. There is a very slight interest in the matter in America just now because you have three or four or five million people unemployed. You do not even know within 50 per cent how many there are. You really do not know whether you have three or four or five million. The fact that there are no reliable unemployment statistics anywhere in the world is an indication that we do not actually regard the matter very seriously. It seems to me a duty incumbent upon the community as a whole to eliminate the evil of unemployment, and it can do so in two ways: first of all by lessening the volume of unemployment. There is no single cure for it, but there are a great number of steps which might be taken, each one of which would bring us a little nearer to the solution of the problem. After we have done all we can in that direction, however, there will still remain a considerable unemployment problem, and the only way to deal with that is by unemployment insurance.

Since I have come to America I have heard the most extraordinary statements about the terrible results in England of our Unemployment Insurance Act. Of course, to any one living in England and knowing the facts these stories are rather amusing. They indicate how inadequate is the information which

passes from one great country to another. They are, however, quite misleading. Up to the year 1920 we had insured against unemployment four million people from the shipbuilding, engineering and building trades. In that year an act was passed including in its scope all of the manual workers and all other workers whose wages were not over £250 a year. That added eight million people to the number of those previously insured. It is obvious that if you suddenly treble the number of people who are insured, and do this just on the verge of a great industrial crisis, you are not going to have the machine working perfectly smoothly. You have not set up your administrative checks, and so you get a certain amount of abuse. I feel safe in saying that, on the whole, the effect of the Unemployment Insurance Act is good; that very serious consequences might have occurred had we not had that act in operation. I feel it is absolutely essential, if we are to get industrial peace, that we should remove from the minds of the workers the menace of unemployment. Give them work if you can, but where you can't, provide maintenance. It is said sometimes, "That is an unwise thing to do; it will demoralize the workers if they are paid for not working." I am drawing a director's salary while I am playing here, talking and visiting factories. I am not working; but I am not demoralized. Where you deal with mental workers, you do not say they will be demoralized if for a time their services are not required. What is there so absolutely different in the psychological make-up of the man who happens to be paid a weekly wage and the clerk who is paid a monthly salary?

Is this unemployment insurance financially possible? I am not going into a detailed argument. I would suggest as a figure which is probably correct—I think it is correct for England and not very far out for America—that if you were to find a sum equivalent to $3\frac{1}{2}$ per cent on your wage bill, it would be sufficient to enable you forever to remove the menace of unemployment from every worker in the land. You could secure with that $3\frac{1}{2}$ per cent a sum which would provide unemployment insurance not equal in amount to a man's earnings, but sufficiently large to remove the fear of hunger, of cold, of suffering when a man is out of work. Surely if it is necessary, if it is essential for the functioning of industry that there shall be a reserve of workers, it is up to industry to maintain those workers during such a period of time as their services are not required. We shall

never have industrial peace until we do this. } We are trying to deal with this in England: the nation on a small scale, the trade unions with supplementary unemployment funds, and a number of employers with further supplementary funds.

In our factory, the unemployed get one-half of their wage; if they are married, 60 per cent; if they are married and have children, 75 per cent. We find that that has removed the menace of unemployment; that the men are not demoralized; that they do not want to be out of work. They are anxious to come back to work. What does it cost us? In addition to contributions to the national fund and to sums voluntarily contributed by the workers it costs us 1 per cent of our wage bill. To remove the menace of unemployment from our men that is not a big sum. If it were not for the national fund, we should have to pay $3\frac{1}{2}$ per cent. If the employer found the whole sum, it would, of course, pass on in time either to the workers or to the consumers. Psychologically, it is better that the worker should share, though economically it comes very much to the same thing whether he does so or not.

As regards the status of the worker, I see just the same thing here that we find in England, that the worker resents the continuance of that condition in which he is regarded as a servant to obey the orders of the "master." We talk about master and man. Why master? We have always talked about masters and men, when we don't call them "hands." But why master? Take your capitalist. He has got ten million dollars. It is in bills. He can't eat it. He can't dress in it. He can't live in it. It is just so much rubbish. Here you have your workers. Each one has a pair of hands. They have a certain craft, skill. It is only when the capitalist and the workers come together, when they cooperate, that you get production. But why should the man who happens to have the capital always be the master and the other man the servant? Why not cooperate? The bulk of the workers say, "We do not want to bother about the financial side or the commercial side of your business, but we desire to have a say in determining the conditions under which we shall work." That is a reasonable proposition.

We are not going to get real cooperation between capital and labor and so long as the wage-earner is working, after he has received his flat rate wage of so much a day, to increase the dividends of a shareholder whom he does not know and whose face he has never seen. He says, "Why should I work harder

than is necessary to hold my job? Why should I put myself out just to increase the profits of some of your bondholders?" I have no answer to that question. Often I can persuade him to do it; but my position is illogical. Employers must try to place themselves in a position which is impregnable. Industry cannot be conducted without profit. We must make sufficient return on capital to enable us to secure all that is required for the full development of the business. After that, any further profit is surplus profit, and I do not think it is unfair that it should be divided with the workers "fifty-fifty."

Those are my five points. I believe that if we employers will grant those five points we can get industrial peace.

One other comment. I cannot help thinking, and I speak with great diffidence, that the American employer in fighting the unions is making a mistake. I think he is fighting a losing battle. As I see him here, I am reminded of our condition thirty years ago when we were engaged in the same struggle. We tried to crush the unions, and we had a long and bitter struggle with them. But democracy was on their side and democracy won. And after we were defeated, after we ceased to fight, after we expressed our willingness, not through any virtue or grace, but through the influence of force majeure, we suddenly found that we had won the battle and not lost it. The unions withdrew their fighting men and replaced them with diplomats: men like Clynes, Thomas, Hodges and a number of others. They are learning that their old policy of restriction of output was a mistake, and they are now coming to our side and are cooperating with us in increasing production. We find that we can work in perfect amity with the unions, though we do not by any means always agree or give way to their demands.

In the future, the great industrial administrator will be a leader of men. One cannot drive a free people. We industrial administrators, if we have not already acquired it, must learn the art of leadership. We must learn to know our men; one cannot lead men one does not know. May I conclude by recalling these words of Tolstoi:

It all lies in the fact that men think there are circumstances when one may deal with human beings without love, and there are no such circumstances. One may deal with things without love; one may cut down trees, make bricks, hammer iron without love. But you cannot deal with men without it just as you cannot deal with bees without being careful. If you deal carelessly with bees, you will injure them and will yourselves be injured. And so with men.

IV. SATISFIED INSTINCTS THE BASIS OF INDUSTRIAL EFFICIENCY

Men are bundles of instinctive energies; balked, they lead to malignant disorders; satisfied, they lead to industrial efficiency. The task of economic statesmanship is to discover safe and sane means for satisfying the basic drives of human nature in the day's work. A great many means of satisfactory expression of the energies of human nature have already been worked out; many others remain to be discovered.

It must be emphasized repeatedly that the placing of stress upon the instinctive nature of man does not detract from the importance of the intellectual and rational factors. Far from that, it adds positive stress to the rational factors by showing the dynamic force behind the minds of men. Reason is not a mere static condition of the mind; it is the output of a genuine instinct of curiosity and of thought. And modern psychology urges no proposition more strongly than that the workers have a vital contribution of intelligence to make to industry, and that unless they are encouraged to make this contribution, one of the most powerful cravings of normal human nature stands thwarted and repressed.

Tead speaks of the instinctive energies as being "stubbornly insistent." McDougall declares: "The instinctive impulses determine the ends of all activities and supply the driving power by which all mental activities are sustained." James referred to an instinct as "irresistible." Simons finds instinct "powerful and essential." Lippmann warns that "only by supplying our passions with civilized interests can we escape their destructive force." Parker showed the necessity of giving to the average man, as far as possible, a life that is "psychologically full." Modern psychology gives large recognition to the dynamic features of human nature, and to the importance of satisfying to a reasonable degree the normal human longings.

At this point, a precaution is necessary to avoid misunderstanding. Psychology makes no claim that whatever any man

seeks to do to satisfy human nature, should be allowed. There is no room for the accusation that psychology would encourage human nature to run riot in industry, free from discipline or order. The whole force of the ideas of psychology is concentrated upon the need for organization of human nature and industry on a pattern which reserves full discipline and control. Repression of many lustful and vicious forms of expression is indispensable. Obedience, conformity, the following of orders, rules and laws are unquestioned features of industrial organization. Discipline is not undermined or menaced by the principle of satisfying in wholesome and efficient forms the basic human energies.

BRINGING OUT SPONTANEOUS INITIATIVE¹

When men feel themselves under constraint, when they cannot determine and direct their actions, when they believe that their behavior is governed by forces beyond their control, when they have no voice in settling hours of work and compensation, the instinct of self-assertion revolts. This instinct is nature's high explosive. It has destroyed monarchies. It is the essence of democracy. And it is also the fundamental cause of labor's resistance to the present industrial system.

The issue, however, is often confused. The underlying racial impulse which ignites the spark of conflict is hidden in the conflagration that follows. The explosive ingredient of self-assertion is not easily identified as the unstable element in the usually peaceful compound of democracy. The individual himself, indeed, is usually unaware of these instinctive impulses. It is a well-known fact of psychology that a man first acts instinctively, and then finds reasons to justify his actions. And the reasons given are generally suggested by the exigencies of the moment. Occasionally, however, in more thoughtful moods, the fundamental impulse is revealed. So we find in a recent pronouncement of the American Federation of Labor, a clear statement of the issue. "It is essential," the program says, "that the workers should have a voice in determining the laws within industry and commerce which they have as citizens in determining the legislative enactments which shall govern them."

¹ Edgar James Swift. *Instinct and Business*. Scribner's Magazine. November, 1919. p. 584-91. Charles Scribner's Sons. New York.

This is labor's protest against government without representation. It is a definite demand for industrial democracy. . .

Human nature cannot be organized out of men—not even by scientific management. There is always danger under mechanically efficient methods of increasing human costs to a degree that makes mechanical efficiency too expensive. We hear much today about overhead charges. It is now time that attention be given to inside-head expenses.

Managers have taken account of the various factors in production. They have analyzed and itemized the elements in the job. Under scientific management they find the right man, give him the right tools, and teach him to use them in the right way. They have omitted only one factor—human nature. Some day we shall learn that the fundamental element of efficiency is man himself, his instincts and emotions. An efficient organization will then be found to be one that builds upon these instincts and, instead of ignoring them, makes them allies in productive achievement.

Consider the lack of insight into human nature in the rule of one authority for speeding up. "It is only through enforced standardization of methods, enforced adoption of the best implements and working conditions, and enforced cooperation that this faster work can be assured. And the duty of enforcing the adoption of standards and of enforcing this cooperation rests with the management." That sort of cooperation does not interest workmen. The less initiative, judgment, responsibility, and intelligence a man has, the more readily will he fit into this enforced adaptation. Intelligence has the inconvenient habit of occasionally asserting itself. And this is unpleasant for those who claim a monopoly of this gift.

\ Enforced uniformity in methods of work—imitation, routine—deaden the mind. In proportion as habits are acquired intelligence lapses. Initiative is lost, and the number of men fitted for positions of responsibility decreases. Business men are continually calling for young men of initiative. The manager for a large factory recently said that among his thousand employees he could not find men fitted for half a dozen subordinate chieftainships. The reason is that the employees had been trained to follow directions. Modern business has become abnormally centralized, and at the center stands the manager from whom all intelligence issues. } But this method denies a hereafter. And the present popularity of revolutions shows that

starving the brains of workingmen is a terrible social menace. Efficient management would encourage initiative so as to give those of ability a chance to know themselves. It would make distinctions by finding them. Men do not object to being taught; they do not oppose being directed. But they always resist an uncooperative relationship, the advantages of which they think are weighted against them. This suspicion and the practical prohibition of initiative has greatly reduced the productive value of wage work. The resistance of employees to the present system of employer and worker, which has reached its culmination under unscientific "scientific management," indicates a wilful desire of wage-earners to be human beings.

To avoid social waste, to call into the service of the nation the instinct of workmanship, an industrial democracy is necessary. And it must be wholly frank and open. The workmen will accept nothing less. This is no time for "secret treaties." Entertainments, lectures, and welfare organizations are of the greatest value. But they will not fulfill the demands of industrial reconstruction. Rather, they should be one expression of the principle of cooperation in a democracy. They do not buy bread nor pay rent. And the workers are conscious today of the economic side of labor.

Industrial democracy frankly and ingenuously carried out satisfies both the instinctive and economic needs. And it is not merely a theory. It has been successfully introduced into a few plants and the chief reason for its slow adoption is the inertia of the human mind—the unwillingness to break completely with the past, the adhesion to antiquated notions of business.

Human nature is much the same in all ranks of men, as well as in the old and young, and bonuses awaken interest in securing rewards rather than in improving the quality of the work. They do not arouse creative interest. Business men have found, just as teachers learned long ago, that rewards have only an artificial relation to production. They do not maintain an alert interest in achievement. Besides, rewards usually awaken suspicion. They suggest an ulterior purpose. And the workers are not unaware that the owners receive a rather generous proportion of the profits of the new economies and efficiencies.

Rewards are offered in factories for the same reason that led to their use in the schools. They are the easiest way of

meeting a perplexing situation. It is characteristic of man, when confronted by a difficulty that must be overcome, to follow the line of least resistance instead of profoundly studying the problem. Educators have learned that young people will not work efficiently unless they appreciate the meaning and use of what they are doing and realize its value for themselves. This is as true of adults as of children. But employers, when compulsion failed, resorted to fictitious incentives instead of developing the creative interest in workmanship. Yet this interest is necessary if the work is to be done efficiently. And the workers must be convinced that the improved product of their interest will benefit themselves as well as their employers.

FUNDAMENTAL URGES AND DRIVES ¹

Manufacturers and other employers would come to him (W. B. Wilson, Secretary of Labor) to discuss questions of wages and hours, and he would always courteously discuss these two things with them. After the interview was over, however, and these manufacturers had left the room, he would say:

"Oh, how they miss the point! It's not wages and hours, as such, in which wage earners of the country are interested. Wages and hours are but temporary means to an end. Wage earners are no different from the rest of us. We are all actuated by the same basic motives. The three great words of life are self-preservation, self-reproduction and self-respect. These are fundamental with all normal persons, whether employers or wage workers. Oh, may the time come when the employer will realize that it is not wages or hours that the wage workers are interested in; but rather, they are interested in self-preservation, self-reproduction and self-respect! When employers grasp this fact, and so arrange industry as to enable the wage worker to work out his self-preservation, self-reproduction and self-respect, then the question of wages and hours will solve itself. We talk about cooperation. We all want cooperation, but cooperation will come only as employer and wage worker unite in developing means whereby both shall have and enjoy self-preservation, self-reproduction and self-respect."

¹ Roger W. Babson. W. B. Wilson and the Department of Labor. p. 72. Quotation from Secretary Wilson. Brentano's. New York. 1917.

PRACTICAL STEPS TOWARD ENLISTING
WORKERS' COOPERATION ¹

Employee representation in or cooperation with management is a sound enough principle, provided it is worked out intelligently in practice. The great need in industry is to get men and management close together—it is the most necessary undertaking.

There are certain dangers as well as certain plain advantages, in these plans. The workingmen are immediately interested in questions of wages, hours, housing, sanitary conditions in the shop, and in anything that tends to effect either their comfort or the productivity of their labor. They not merely have an interest, but in many cases are entirely competent to speak with a high degree of real knowledge. It is a well-known fact that a large proportion of the inventions for the improvement of industrial processes have come from workmen who in their daily experience and by the cooperation of their fellows are able to obtain suggestions for devices that are likely to cut corners and lessen costs. If the workmen feel that they themselves are likely to benefit by improvements, improvements will be devised.

As a rule the average workingman has little interest in or knowledge of the broad questions of finance, how to secure credit, how to determine the best method of payment for the sales of the product, and so on. Thoughtful leaders of labor recognize this limitation and disapprove plans which place on the employee responsibilities of management beyond the matters already mentioned, matters, that is, in which they are directly interested and on which they are entirely competent to speak.

Nevertheless it is my opinion that among the measures to prevent strikes, first consideration should be given to proposals which seek to reestablish cordial and cooperative relations between men and management. . .

Through this method of group action and discussion the employees gradually come to feel that they are a real and vital part of the institution and that the success of the whole institution depends on the way in which they do their work and the attitude which they display toward their work. Each employee has

¹John Hays Hammond. *Strikes—How to Avoid Them*. Industrial Management. February 1, 1921. p. 82-3, 83-4.

concrete evidence of the fact that he is a participant not only in the success of his concern when a dividend is not made, but that he has a definite channel of expression and may make suggestions tending to improve not only his own condition but that of his fellows.

All this is nothing more than a logical extension of collective bargaining. I am one of those who are thoroughly committed to the principle of collective bargaining. As I see it, one of the obstacles to this kind of relationship is the fact that in many cases the local manager—who is not an owner of the business—has not the authority to deal with employees as he knows they should be dealt with. Absentee management, like absentee landlordism, is evil, and I like to believe that both are passing out of fashion. If we are ever to get out of the present phase of the labor situation in which, to a very large extent, labor is antagonistic to capital and capital feels that it must regard labor as a sworn enemy, we must have collective bargaining. The soviet in Russia is nothing but a crude attempt on the part of workingmen to take into their own hands power which now belongs to the owners of business alone, but which should be shared, so far as the technical processes and the things about which the employee knows, between the workingmen and the owners of business. I cannot believe that the soviet idea has made the headway in the United States which some seem to fear. But if it has, the remedy is not to shut the door of management against labor, but to take labor in to the extent which I have outlined above, and let labor understand that it can greatly help but cannot "run" industry.

Let me sum up my creed of industrial relations by quoting from a statement which I made before the war. The Industrial Relations Commission, of which Frank Walsh was chairman had asked for my views on general labor questions and on the specific question of strikes:

"I do not believe that I am too optimistic in expressing the opinion that the relations between employer and employee are better today than for many years past. The employer is recognizing the justice and the advantage, when properly conducted, of the principle of collective bargaining; and both employer and employee recognize more than ever their interdependence and their reciprocal obligations as well, and with the spirit of

fair play that generally prevails, and must ultimately prevail, we have every reason to believe that labor agitators, on the one hand, and the unreasonable employers, many of them on the other, will soon become less serious obstacles to industrial peace generally.

"While I am opposed to the principle of the closed shop, believing it to be thoroughly un-American, I nevertheless strongly favor labor organizations when the leadership is in the hands of the best class of labor leaders, and I believe that employers of labor would do well to support labor organizations of that kind to prevent the growth of organizations of the radical stripe.

"I do not believe that there are any irreconcilable differences or an 'irreconcilable conflict' between capital and labor. While it may be true that both are not equally benefited by the maintenance of industrial peace, it is true that they both are greatly hurt by industrial warfare. I believe that if the managers of corporations would more generally take into their confidence their employees as to the business necessities and as to the disastrous effect of adverse legislation to their business, they would not only stimulate the interests of the employees in their work, but also enlist their support and influence against injurious legislation. It is necessary for managers of corporations to impress upon employees that they are 'in the same boat,' and for their own safety they both should oppose either political demagogues or selfish labor agitators 'rocking the boat.'

"I do not believe in what is called, as I understand it, the democratization of labor; that is, to have industrial methods, processes and direction determined by employees, as this would result in bringing in politics—that is to say, intrigues—and other factors which have an undermining and subversive influence in industrial operations. But I believe thoroughly in the men in each department of the management keeping in close touch with the work of those departments, and that has been done in all the activities that I have attempted, with the result that I have never had a strike on the part of any of the employees I have had all over the world."

AS VIEWED BY A LEADER OF WORKERS¹

Thus we find Mr. Hodges, the General Secretary of the Miners' Federation, in one of his numerous speeches in favour of the nationalization of the mines, declaring that what they demanded was a new status for the worker as a controller of his industry. Miners were not anarchists, although they had the power to be. They realized that their interests were bound up with those of the community, and therefore they demanded conditions which would develop the corporate sense. . . Education was carrying men along social rather than individualistic lines, and right throughout the mining industry there was the desire to be something different from what they were. This desire to be master of the work in which the man was engaged was the great thing that was vital in working-class life. . . There had never been a movement born of greater moral aspiration than this movement for the nationalization of the mines. The miner wanted to be in a position where it would be to him a point of honour not to allow even a piece of timber to be wasted, where he would want to do his work well. He wanted a social contract.

These extracts from a speech by Mr. Hodges are put together from the separate imperfect reports in the Times, Daily News, and Daily Herald of October 27, 1919. A more explicit statement of Mr. Hodges' views will be found in his speech at the Annual Conference of the Miners' Federation in July 1918: "For the last two or three years a new movement has sprung up in the labour world which deals with the question of joint control of the industry by representatives from the side which represents, for the most part, the consumer, and representatives of the workmen, who are the producers. Nationalization in the old sense is no longer attractive. As a matter of fact, you can have nationalization, but still be in a better position than you are now under private ownership. That is the experience of institutions which have been state owned and state controlled for many years. The most remarkable scheme worked out during the last year is the theory worked out by the. . . Postmen's Federation. He has endeavoured to

¹ Sidney and Beatrice Webb. *The History of Trade Unionism*. Rev. ed. p. 673-5. Longmans, Green and Company. New York.

provide a scheme by which the postal workers should have a definite amount of control, a definite form of control, in the postal service, and in working it out he has demonstrated beyond all doubt how at every point he is up against the power of the bureaucrats, as exemplified by the State. Now, is it any good to have these mines nationalized unless we are going to exercise some form of control as producers? If not, the whole tendency will be toward the power of bureaucracy. We shall be given no status at all in the industry, except to be the mere producers, as we have been in the past years. Under state ownership the workmen should be desirous of having something more than the mere question of wages or the mere consideration of employment; the workmen should have some directive power in the industry in which they are engaged. Now, how are we going to have this directive power under state control? I think we must admit that the side representing the consumers (the state) should have some form of control on property which will be state property, and when a national industry becomes controlled you must have permanent officials to look after the consumers' interest, and from the purely producers' point of view the Miners' Federation must represent the producers in the central authority and in the decentralized authority, right down to the separate collieries. Are we ready to do this? Are we prepared for this, starting at the separate collieries, indicating how the industry is to be developed locally? Men must take their share in understanding all the relations embodied in the export side of the trade; they must take a share even in controlling the banking arrangements which govern the financial side of the industry, and with that comes a very great deal of responsibility. Now, are we prepared to assume that responsibility, a responsibility which is implied in the term workmen's control? It is going to be a big task and a test of the educational attainments of the miners themselves if they assume control of industry, and if it did not thrive under that control there is the possibility we should have to hark back to private ownership in order to make it successful. . . . I hold these views, and unless they are accompanied by an effective form of working-class control, I do not believe that nationalization will do any good for anybody."

HUMAN AND MECHANICAL FACTORS IN
INDUSTRIAL SCIENCE¹

The real problem is no longer whether it is possible to return to mediæval craftsmanship, but the detailed problem of how far and in what manner we can reap the fullest advantage of modern machinery, while avoiding its evils. And this full human control of machinery for human ends can only be gained when the science of the relation between man and machine is fully developed. We can only control what we understand; and it has been the blind wastes and inefficiencies of the past that have given rise to most of the evils that the workers deplore. I have said this to the workers in conference; and their reply brings us to the very heart of the matter. That reply is,—whether our science is able to serve the greater human ends depends entirely on how far we keep those greater ends in view. Science herself is impartial, and lends herself as easily to destruction as to construction.

The workers ask, then, what are the ends which we are serving? When we speak of Production, they ask, "Production of what?" "Production of things or of men? Of goods or of human well-being and happiness?" It has been said to me over and over again, "There are things more important than mere production, and one of these is human personality." The criticism by these educated men of our emphasis on production is not on the fallacious ground of "over-production,"—a fallacy they understood as well as ourselves; it is on moral and social grounds. They over-ride the artificial barriers which the sophisticated erect between economic, psychological and ethical questions, and ask that we shall view industrial processes in their proper relation to the full needs of human nature. They have even pointed out to me that our science is incomplete unless it deals with the wide social effects of technical processes. They do not deny the need for production, but demand some social guidance of that purpose in relation to moral ends.

Moreover, they are seeking to find in their daily occupation a true vocation,—one which shall develop them further in their manhood and employ the balance of powers of mind and body.

¹ S. S. Brierley. *Attitude of Employees to Industrial Psychology*. *British Journal of Psychology*. Vol. 10. p. 222-3. March, 1920.

It was asked on one occasion, "Is a man in industry sleeping or living? Is he just as in bed, marking time, existing, but not living? Or is he really living in the full human sense?" When one speaks to them of "vocational tests," one meets sometimes with derision. We wish to test, they say, not for a vocation but for a mechanical operation; and the term "vocation" is meaningless in such a connection.

In response to this demand, one is able to urge that we are asking for a wider education, general and technical, in order that each worker may come to understand the part he plays in relation to the complete scheme of industrial activity. The workers admit that such an imaginative understanding of the relation of each bit of work to the great creative whole of industry is a most desirable thing, but they go on to urge that this cannot of itself satisfy the desire for creative work. It will rather aggravate the emotional dissatisfaction, unless there goes with it some measure of effective control of the industrial machine. If the worker himself and the part he plays in the industrial whole are directed entirely from without, the mere knowledge of how he is directed can be but an exasperation of his feelings of impotence and futility. Therefore, he argues, the assumption by the worker of some measure of genuine control of industrial processes is the only way in which it is possible to restore to the vast dehumanised machine of modern production any true satisfaction for the workmanly and creative impulses of the bulk of those whose destiny it controls. This is their answer to the problem of over-specialisation, to the question of how the technical psychology of industrial processes can be made to serve the greater human purposes.

ORGANIZED LABOR'S DESIRES¹

There is a knowledge of industry among the workers in industry of which society has not begun to avail itself. The effort has been to suppress use of that knowledge and to demean those who possess it. The workers know their work as none but the

¹ Part of Program Adopted by the American Federation of Labor Convention, Montreal, 1920. Monthly Labor Review. August, 1920. p. 168-9.

workers can know it. The shoemaker knows his last and the engineer understands the capacity of his engine.

The workers are appalled at the waste and ignorance of management, but they are too frequently denied the chance to offer their knowledge for use.

They decline to be enslaved by the use of their own knowledge and they cannot give of it freely or effectively except as equals in industry, with all of the rights and privileges and with all of the stature and standing of employers.

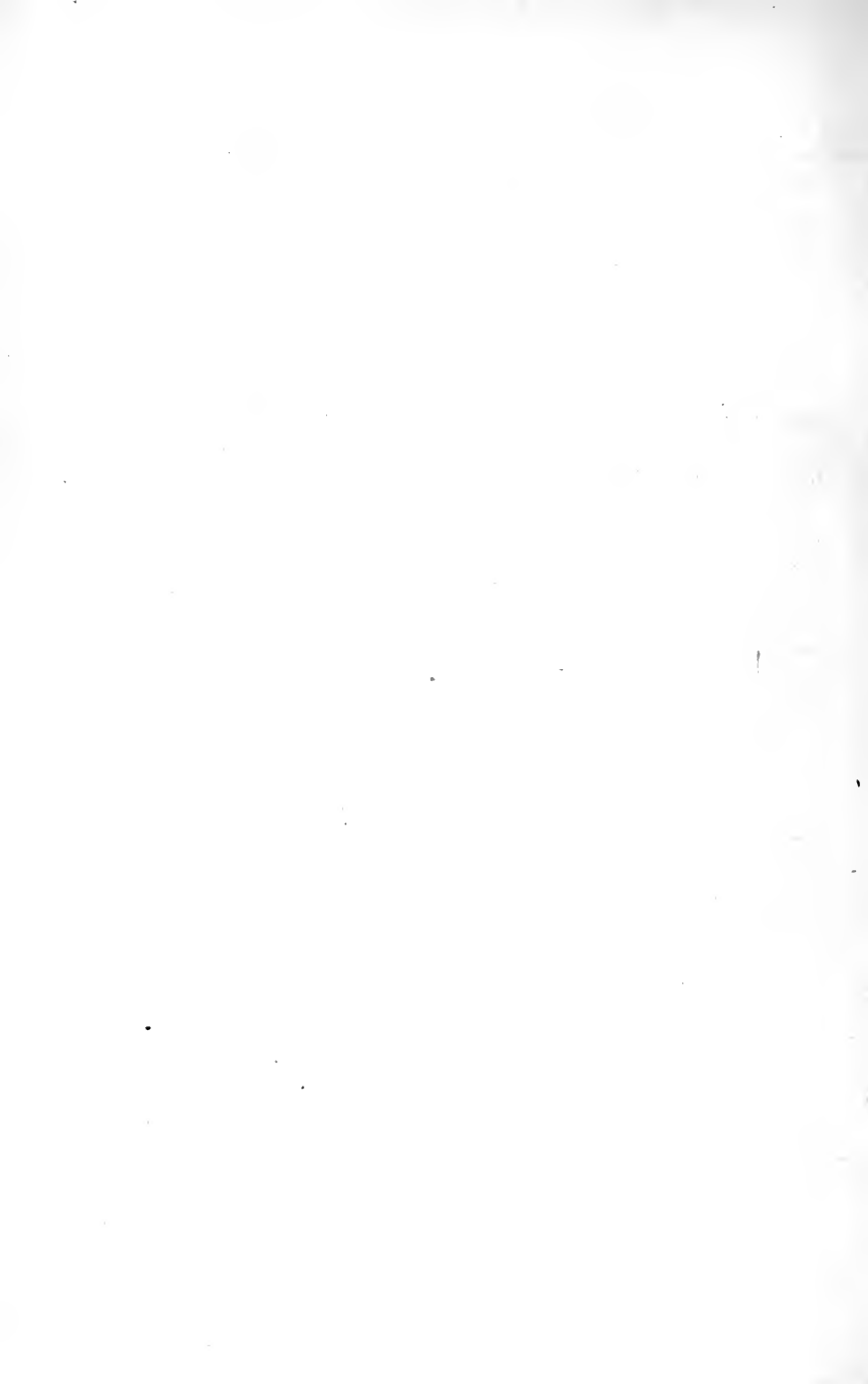
Adoption of the principle of voluntary effort, of full cooperation in industry, will bring to the industrial life of the nation such an impetus that production will cease forever to be a problem in American life. . .

Autocratic industry kills incentive. It punishes brilliancy of attainment. It warps the mind and drains the energy from the body. We have repeatedly condemned the principle of autocratic control of industry, and we now declare that short of its complete removal from our industrial life there is no industrial salvation and no hope of abundance in our time.

We urge the setting up on conference boards of organized workers and employers, thoroughly voluntary in character and in thorough accord with our trade-union organizations, as means of promoting the democracy of industry through development of cooperative effort. We point out to employers the fact that industry, which is the life blood of our civilization, cannot be made the plaything and the pawn of a few who by chance today hold control. Industry is the thing by which all must live, and it must be given the opportunity to function at its best.

Labor turnover is but one of the evils which will disappear in proportion as the workers are given voice in management. This is proven by statistics which show the lowest turnover in industries where the workers exercise the most effective voice by reason of the highest degree of organization.

We propose the salvation of industry. We propose the means whereby the world may be fed and clothed and housed and given happiness. We have service to give, and if permitted to give freely and on terms of manhood and equality we will give in abundance. We cannot be driven as slaves, but we can give mighty service in a common effort of humankind.



V. THE ECONOMIC POWER OF THE CREATIVE INSTINCT

A large part of traditional industrial relations has been built upon the supposition that labor is naturally lazy, and instinctively hates work. Psychology points out that what ordinarily appears to be laziness arises from the fact that measures have never been taken to appeal to the instinct of workmanship. Pride in work, satisfaction in work, creativeness in work are deep human realities when the conditions of work are properly adapted to the human organism. When working conditions, or methods of management are such as to cause the creative instinct to atrophy, workers become indifferent to their work, and often hate it. When working conditions and methods of management are such as to stimulate and satisfy the creative instinct, workers take a genuine interest in their work. The creative instinct takes rank with the possessive instinct in its force and energy.

Business executives who manage men on the assumption that all they work for is money leave untapped the rich resources of productive energy contained in the normal man's instinct of workmanship. The worker is a man of more than one motive, and that the money motive. He is capable of craftsmanship, and his nature fundamentally longs for the satisfactions of interesting workmanship. Psychology attempts to aid the business man in discovering the means of arousing and organizing the creative energies of human beings.

DOES THE WORKER HAVE A CREATIVE INSTINCT?¹

The instinct of workmanship has been all but crowded out. So gradual and subtle has been the change that we do not recognize it until we suddenly note the contrast. Like the art

¹ Irving Fisher. Humanizing Industry. Annals of the American Academy. March, 1919. p. 87-90.

of making iridescent glass which, since the iridescence was due to imperfections in the process of glass making, was lost without the loss being realized as that process was gradually perfected, so the instinct of workmanship has been dropped out by the very perfection of modern industry. While attending so closely to the product, we have forgotten the psychology of the producer. While making one man perfect in one point and another in another point, we have sacrificed the satisfaction of both. The monotonous nature of the work, and the fact that the workman does not see his product, are the characteristics of modern industry which cripple the effort that instinct could put into the work, and which are responsible for the dissatisfaction and unrest. Get rid of them, and the main (though not the only) obstacle to industrial peace will be gone.

In modern industry, individuality is lost,—each man's work is thrown in a common pool. In former days, the cobbler made the pair of shoes and watched their progress, inquiring of the wearer, "How do they wear today?" The artist similarly has the joy of self-expression and creation in his picture.

Text-books of economics today make the statement that the motive for work is money-making, with the exception that artists and scientists work for the joy that their work gives them. There is no greater fallacy than to make this contrast. The workman has this same power, though latent, of enjoying self-expression in his work. Our usual acceptance of this fallacy shows how far we are off the track.

President Eliot of Harvard once spoke in Boston on the joy of work. The next week a labor leader in the same hall spoke with a scornful laugh of the "high brow's" reference to such "joy" and the crowd of workingmen present approvingly joined in his ridicule. This incident is pathetic evidence that joy of work is too often conspicuous by its absence. When I first became conscious of this fact, I was loath to publish my opinions. I was not sufficiently experienced in the field either as laborer or employer. I wanted to wait until I could see the ideas tested.

In the last year Miss Marot's book "The Creative Impulse in Industry," and Ordway Tead's on "The Instinct in Industry," have given expression to substantially these same conclusions. From still another angle Carleton H. Parker had reached similar views. The strongest evidence of their truth, however, is the experience of Robert B. Wolf, who has applied them in the practical management of a paper pulp factory.

What did Wolf do? He introduced into his mill a system of record-charts by which each individual workman could see what his contribution to the product was. Just as in baseball, we are interested in the score; and just as in school, students find grades an incentive, so the workmen were stimulated by having and making a record. The curves and charts which Wolf devised gave an opportunity for such expression as the artist or handicraftsman enjoys.

Before Wolf came to the mill, where he tried out these ideas, there used to be discontent. On his arrival as manager, there was a strike on, and pickets surrounding the yards. The mill owner told him to get that energy that was called out by the strike into the making of wood-pulp. In strikes, as in the trenches, there is the satisfaction of the instincts.

At first antagonistic to Wolf's innovations, the men soon saw the "new game" and in striving to excel in it, found a constructive outlet for the impulses that had previously gone into destructive channels. They no longer have to make trouble in order to have the feeling of "something doing." Discontent is gone. It has sometimes been necessary to change a man's work, but almost never to discharge a man for inefficiency. The tendency of letting men slip into dead-end jobs is overcome. Mentally and physically each man is suited to his job. Promotions and the development of all-round ability are encouraged. The work becomes educative, as the workman, watching his progress, masters the process until he can himself invent improvements in the technique.

I have sometimes illustrated the fact that employees need other than monetary inducements, in this way: Suppose President Wilson, as General Pershing's employer, had said to the General when he called him to the White House before sending him overseas: "Now, Pershing, you are going to do a job for me. I want it well done. I know you will shirk if you have a chance. I therefore want to hitch up your interests with mine. Your pay will depend on your victories. I'll pay you a bonus for every German killed and another for every German taken prisoner. I'll pay you also for overtime beyond eight hours a day."

How would General Pershing reply to such "inducements," especially when put forward as though President Wilson assumed that he could not be expected to feel any other motive than the mercenary one? Would he not have replied:

"Here is my resignation, Mr. President. You have insulted me. What do you take me for? Of course a man must live, but money is the last thing I am thinking of now. I want to fight for my country, for you, for our ideals, for glory, and for the satisfaction of expressing whatever is in me of military genius."

An objector might say, "But Pershing is a general, and artist in his line, an exceptional man." Were not the common soldiers under him fighting for the same motives? And were they not the very same men who were formerly in shops working merely for pay? The army affords the most supreme illustration of men motivated by entirely different instincts than simply self-preservation or "making a living." Instincts which had been repressed or dormant up to this point in their lives were found far more powerful in these workmen soldiers than the instinct of making a living. When, as ex-soldiers, they come back to be workmen again they will unconsciously miss something and unless it is supplied them, there will be trouble. We must satisfy their higher instincts. The employer must see in the workman his brother man, of the same flesh and blood, with the same soul-hunger, needing the same soul-food to satisfy it.

HOW THE INSTINCT OF WORKMANSHIP IS AROUSED ¹

Production is always a matter, not only of technical ability or muscular power and health, but, more than all these, of willingness as well. The great difference between slave or prison labor and free labor is just this matter of willingness, spontaneity, freedom. Very much has been said of "will-power" in recent times by fake psychologists. We are told that it is possible to train will-power just as it is possible to strengthen memory and certain other so-called "faculties" of the mind. But how are we going to create will-power if the scientific psychologists are right in telling us that there is no such thing as will? The problem would be immensely simplified if we could isolate the appendix or the pituitary gland and perform an operation on the one or feed the other; but apparently there is no will gland

¹ Arthur J. Todd. Reaching the Mainspring of the Wills of People. *Annals of the American Academy*. September, 1920. p. 26-35.

or brain tract labelled "will." The trouble is that the human will is simply the dynamic aspect of the whole human personality; that is, it is human character in action; therefore, a very complicated affair.

We are all complexes, a mass of perhaps thousands of unit characters which go to make up the whole thing we call the human personality or the human character. Nobody, however, includes in his make-up every element in a perfect formula. At least we all represent individual emphasis upon certain characteristics that may be common to all people. The strata in our character topography run thin or thick, according to certain more or less understood principles of heredity, early training, education, etc.; or, put in another way, our mixture, that is, our character force, may run lean or rich, according to season, and according to certain conditions of our social atmosphere. Anybody who has ever driven an automobile knows that he gets more power on a moist day. Just so human character, on its energy side, responds to certain subtle elements in the environment.

Since will is fundamentally ideas in action, the great problem of evoking will-power is how to create an atmosphere in which ideas will bloom. If it is will-power, willingness, that we want, instead of "won't"-power, the power of negation and obstruction, we must first learn to drain off the morasses of fear and suspicion which have been allowed to gather about industry. Would it be stretching a metaphor to say that part of the remedy for "won't"-power is the providing of just the proper balance of emotional humidity and intellectual dryness?

An accepted principle in sociology is that men are ruled more by their beliefs than by laws. It is commonly assumed that the average run of people have certain fundamental "interests," and that the whole social process is simply the interplay of these fundamental interests struggling for recognition. The simple fact of the matter is that absolute interest does not determine human conduct. It is rather what a man believes his interest to be that determines him. Since motive and belief depend in part upon information it is important at the very beginning of analyzing this problem of the human element in industry to recognize the inexorable necessity of telling the truth, of dealing in "pure facts," just as we insist upon pure food, pure water, pure milk.

"Won't"-power is the product not only of faulty information, but also of balked instincts, of suspicions and repressions, of ingrowing grievances, which result in a whole string of pathological manifestations. Frequently the trick of transforming "won't"-power into will-power is performed simply by opening the valves of expression and by allowing, encouraging, or all but compelling the person to get his suppressed emotion or suspicion or fears or jealousies or hallucinations out of his mind. For this reason, if for no other, grievance committees, shop committees, personnel departments, and impartial machinery, to which the workers have access and freedom to state their grievances, are of enormous value quite apart from any theoretical consideration as to their bearing upon some ideal industrial democracy. The English long ago learned this value of the safety valve, and any Sunday in the year you can see it working in Hyde Park or Victoria Park, where cranks almost without number are spouting their grievances. Such freedom of speech and of assemblage, which is the heritage of English and American democracy, is absolutely sound in its application to industry, and particularly to the problems of production. This does not mean that shops are to be turned into debating societies or that forensic eloquence is to take the place of mechanical skill. There are workers, of course, who, like Mark Twain's Mississippi steamboat, cannot whistle and turn wheels at the same time, but for the most part it is safe to say that the feeling of freedom to express one's grievances carries over somehow or other into free action for the whole personality—muscular and mental.

A simple example will illustrate how people are dominated by beliefs, no matter how foolish the beliefs may be. One of the most troublesome things in the clothing industry is button-hole twist. At certain times it is difficult to get twist of uniform quality, even though the trade designations and numbers remain nominally the same. Sometimes twist on the outside of the spool is of a different thickness from what it is at the center of the spool. In a tailor shop some time ago a protest was made by the buttonhole makers against their twist. They claimed it was of finer quality than customary and therefore made their work harder. This twist was on white spools. An ingenious superintendent conceived the idea of rewinding it on red spools. When he presented it to the workers they accepted

the red spools without question and were altogether happy in their work. I do not underwrite either the ethics or the esthetics of this episode, but simply cite it to illustrate how facts are frequently no match for beliefs in dealing with human beings. . .

The Achieving Impulse

It is perfectly true that the creative impulse, the full impulse to good workmanship and self-expression in the job are not encountered, yet we find in all industries and amongst all ranks of workers men who are genuinely interested in their jobs, men whom the problems of their jobs really attract, men who work at their problems outside of working hours and do not actually stow away their interest in the job with their tools at the end of the day. Management should see to it that this problem interest is not overlooked in the machinery of selection and promotion, nor should it neglect the function of rotation on the job as a means of keeping the worker's mind full of new problems. The ideal state of mind for the worker is the state of mind which marks the real professional man, namely, that his whole working life is an apprenticeship directed toward the satisfying of what Joseph Lee calls the "achieving instinct." Indeed, I think perhaps the whole relationship between a profession and ordinary artisanship is summarized in the idea that a profession is work taken seriously. If the worker can be led to take his work seriously and has been given the proper industrial technique we need not worry about the problem of production. Of course that process of getting him to take his work seriously would involve his thorough initiation into the whole inner meaning of his job, its relation to all the other jobs in his shop, the relationship between his shop and his industry to all the other industries; in other words, it would mean opening up the mind of the worker to his responsibility as a contributory citizen in industry. . .

Production for Production's Sake

Sooner or later in the production game we are brought up with a round turn against the worker's frank, sometimes brutal question, "Produce? Turn out more work? Why should I? What's the use? If I work more I simply work myself out of a job or line the bosses' pockets"; or, "I have got enough anyhow; I don't need to work any more." This gets down to

bed-rock. Why, after all, should men produce? Is there any virtue in producing for production's sake? Of what value is it, once you get away from certain fundamental articles of food, clothing and shelter, to make more units of a certain kind of stuff? I am frank to say that if I were a worker, turning out some of the cheap gimcrackery that is made just to sell or play with, and which fits no fundamental human need, I should answer that the only reason which would lead me to produce would be to get more for myself. I am equally frank to say that I can see no way of getting over to the workers the full stimulus to production until they are convinced that the world is suffering from a lack of production of certain basic commodities, and that they, as partners in industry, are responsible for furnishing those commodities. Sidney Hillman told the City Club of Rochester a short while ago that "to get production, not only for one year, but for always, the worker must have a feeling that he has a citizenship in industry as well as in the political state." That is to say, the worker must understand that in reality and in truth he is a responsible citizen who is charged with helping to fulfill some great fundamental demand of the people; or, to put it in another way, that he is helping industry to perform a public service. That is, citizenship in industry means not just voting one's self more pay, not just receiving certain benefits through collective action; it means responsibility and some measure of self-determination and self-expression. No technical arrangement of business nor juggling with piecework or weekwork or production standards or bonus systems will get anywhere in the long run unless this fundamental question of creative responsibility is first answered and answered frankly and fairly. Failing that satisfactory answer, pressure for output on highly specialized and subdivided lines may defeat itself. It is possible to stage routine so as to make it interesting and productive for the time being by applying scientific principles instead of mere rule of thumb, and speed competition teams may succeed for a time; but permanent success can only come if the workers understand the point of this speed, if they are taken into confidence in production plans, if, instead of standing baffled before meaningless production "they are made conscious participators in the creative process."

RELEASING THE INDIVIDUAL WORKER'S ENERGIES¹

An athlete strains every muscle to win a prize, but does he do it because he wants the junk he gets? Wherever money is the accepted measure of achievement, the most of us will be quite apt to struggle for money. We are getting into a new age now, one in which the profiteer is in disgrace, and the man who produces the goods is the man who counts.

A while ago I spoke in New York and I tried to get this idea across. To my surprise that speech was reported as a radical, revolutionary outburst, and I even received an offer from the I.W.W. to join their organization. I hardly think I shall join. It has never occurred to me that the new age would be any dictatorship of the incompetent and in which the organizers and executives of industry would have no place. But it will be a world for the workers, a world in which mere possession will no longer rule, a world which will yield honor not to those who have but to those who serve.

And the best soldier of the common good, is not necessarily the one who performs the most brilliant individual exploit. He is the one who goes furthest in inspiring the whole gang to do its best.

Industry is not an army. You can't reach your objectives by simply giving the right orders. You can't get anywhere by attempting to train your workers to jump at the word of command. Industry is constructive, creative. In order to get results you must depend on the individual initiative of every unit in the organization. You must appeal to their creative instincts. No boss who tries merely to drive his men is worth a damn.

When I was asked to become Director General of the Emergency Fleet Corporation I was worried for fear I would not be given sufficient authority. Now I've got so much authority that I'm afraid of it. There is the constant temptation to give orders—to tell people what to do instead of permitting them to do it.

I know something about making steel, but I don't know anywhere near as much as the millions of steel workers know. No one man can know as much as the crowd knows. No one can

¹ Charles W. Wood. *The Great Change*. p. 124-6. Mr. Schwab and the New Order. Boni and Liveright. New York. 1913.

do as much as the crowd can do. The real leader is not the man who substitutes his own will and his own brain for the will and intelligence of the crowd but the one who releases the energies within the crowd so that the will of the crowd can be expressed.

A PRACTICAL DEMONSTRATION IN INDUSTRIAL ENGINEERING¹

✕ We all know that no man will loaf or slack on a job when he is interested in it. Neither will he slight the quality. It may be possible to work without interest, spurred on by some force of necessity, but the man working in such fashion has no heart in his work.

Why do men work half-heartedly, giving a minimum of return for their wages? Why are they so commonly dissatisfied, grumbling at petty annoyances, resentful of efforts to help them, and quitting their jobs apparently without reason? Why do they strike, and why are they so willing to listen to those who are capable of voicing their discontent? By men, of course, I mean all employees, men and women, in every branch of industry and merchandising. . .

The cause of practically all labor inefficiency—a prelude to labor disturbance—is lack of interest. There are only two ways out of the dilemma. The first is to create interest in work, and the second is to accept disinterestedness as inevitable and to speed up the treadmill so that a certain amount of work has to be turned out, interest or no interest. The first is the democratic American way, the second is the Prussian. In reality, there is no choice, as the Prussian method is now in the process of destroying itself.

Therefore, the way of expression, rather than the way of repression, is the only course open to us. At first sight it may seem impossible to change the monotony of routine work without extremely radical changes in operating conditions, but I know from actual experience that it is possible so to stage even routine work that it will draw and hold the interest of the worker to an absorbing degree.

¹ R. B. Wolf. Making Men Like Their Jobs. System. January and February, 1919. p. 34-8, 222-6.

In other words, the work ceases to be routine under methods which bring forth intelligent conscious control of the process on the part of the worker, when we make him master of the machine instead of merely furnishing the machine with organs of sense.

It is just as necessary to get away from "rule of thumb" methods in directing human activity as it is in the process of handling materials which conform to natural laws. There are laws underlying human nature, and it is the function of the science of philosophy to organize these laws for the benefit of all those who wish to study them. . .

John P. Burke, who is president of the Pulp, Sulphite and Paper Mill Workers' Union, expressed this thought very clearly in a letter which I received from him recently. I quote in part from Mr. Burke's letter:

"When I worked in the factories, which I did from the age of twelve to twenty-five, one of the things I found the most dissatisfaction with was the deadening sameness of the work. I never remember a time, when working in the factories, that I became so interested in my work that I didn't long for quitting time to come.

"After leaving factory work I got a job with a building contractor. Becoming proficient as a carpenter, I time and again did certain work of more or less creative nature; I often became so interested in it that I paid no attention to quitting time. I have worked for two or three hours after the time when I might have quit work. There is joy in creative work."

This feeling of being an automaton, with a lack of responsibility that goes with it, is to my mind the greatest cause of the workman's dissatisfaction. Unfortunately, the workman has in too many cases accepted the state of affairs as inevitable and inherent in the modern industrial movement, so that his idea is to shorten the hours and raise the pay, in order to have as much time away from the work as possible to develop himself along the lines he really enjoys.

Every individual craves responsibility—this is the very foundation rock upon which individuality is built; but modern industry tends to take responsibility away from men and they cease to care—for there is nothing to care about. Of course, they can be made to work faster by giving production bonuses but the production bonuses operate very much like the outer

pressure which comes from low wage conditions. They are outer stimuli, whereas what we need is the inner desire, which is the real motive power of all individual creative activity.

A man cannot work from within, however, unless the work interests him, and the work cannot interest unless the man is using his mental as well as his physical powers. There is nothing creative about purely physical, muscular effort, as creative work begins only when the mental powers of selection and adaptation of means to ends come into play.

What, therefore, has happened to the creative spirit in the progress of industry from individual craftsmanship to infinitely divided, standardized, machine production?

The development of modern industry has taken away from man the opportunity to create a finished article. In other words, the man has become part of a larger individual which we may term an organization. An industrial organization that is performing a particular function in our industrial life is really creating as a whole what the individual man once created in its entirety. Therefore, if we are to enable this larger individual to do its creative work well, we must so design it that the greatest possible number of men are conscious of what the whole organization is doing. They must be conscious participators in the creative process of the organization, which must be so sensitively adjusted that it in turn will be conscious of the welfare of individual members, and of the degree, therefore, of their intelligent participation in the work.

We must give individuality to the organization, in order to give individuality to the men in the organization.

Of course, it is true that because of the creation of this larger industrial unit, with its accompanying specialization through the aid of mechanical devices, production has been enormously increased. But if through these same mechanical devices we destroy the individuality of the workman, the apparent advantage to society will soon be seen to be a disadvantage. We cannot get greater enjoyment out of life by simply increasing our possessions, but only by increasing our capacity for self-expression. Greater expression means manifestation of greater life and therefore a fuller realization of individual capacity which, after all, is what we are striving for.

It is useless for us to try to develop an esprit de corps in an organization by artificial means of a purely emotional nature.

The only kind of an organization that will have a permanent esprit de corps is the kind where the creative power of the individual is free to express his real inner spirit. Unless men intelligently participate in the production process the organization cannot be efficient, for team work comes only when men work together not only with their muscles but also with their hearts and minds.

When we realize that every industrial organization is created by man and that he cannot create something of which he does not contain at least the essence within himself, it seems to me we have a right to take the human body as an example of the highest type of organization. Why not, then, pattern our system of control after the nervous system of the human body, through which the life impulses or vitalizing forces are distributed to the bodily structure? . .

Industrial organization, when consciously patterned after the organization of the human body, is bound to cease repressing the life principle in the individual workmen, for bodily organization in man does not repress the development of the individual cells or the development of the individual bodily organs, but works consciously to give them a greater chance to express life. . .

The employer may pursue the shortsighted policy of preventing the employee from using his brains in his work and thereby hold his compensation down to a low level, but he does not gain one single advantage by doing so. The result is simply to repress creative effort and, what is even worse, to deflect creative power into destructive channels.

Practically all the destructive forces at work in the industrial world today, which are manifested in organized efforts to reduce production, are the results of this autocratic domination of the wills of the workmen by forcing them into an environment where free self-expression is an impossibility.

By destructive forces, I mean the sabotage methods exhibited by certain aspects of the I.W.W. and Bolsheviki movements. We cannot repress the creative process in the individual; we can only deflect it into useless channels, or what is worse still, into destructive channels.

For example: Let us liken the individual to a steam power plant, into the boilers of which fuel (food) and water are constantly being fed to keep up the internal energy. This power

plant can do useful work by allowing the result of this internal combustion (digestion and respiration), the steam, to pass through the cylinders of the engine, thereby making the energy in the fuel available for useful work. If, however, the steam pipe to the engine is plugged and the boilers are still being fired, by properly bringing together fuel, air and water, we must allow the steam (energy) to escape through the safety valve, and so dissipate it into the surrounding atmosphere.

The word dissipate is significant when applied to man. If this relief is not provided, the accumulated pressure will build up until the whole plant will explode and destroy itself, and in so doing may destroy and injure many other useful devices which have been laboriously created by man.

The employer who dams up the channels of useful constructive work by preventing intelligent (conscious) self-expression of the individual workman, is just as sensible as the engineer who shuts off his main steam valve to the engine and then sits on the safety valve of the boiler. The laws of nature are destined to operate always in the same way, and if a man wilfully disobeys them, they will break him. . .

We must not forget we can only have a great art where the organized facts which record the science are so complete and comprehensive that the individual who wishes to express the art can master the natural laws recorded in the science.

In conclusion, does not the problem after all resolve itself into a conscious realization of man's part in the great universal creative plan?

As has been previously indicated, industry has to do with three great fields.

On the one hand we have the field of natural or universal activity, which functions according to pre-determined law. The so called exact sciences, such as chemistry, physics, and mechanics, record the operations in this field. It has to do with our raw materials.

On the other hand we have the field of plant unity—that "spirit of the whole," which reflects itself as *esprit de corps*. It is this that we must develop if the plant is to become a creative center for consciously specializing nature's laws.

Between the field of natural or universal activity and the field of plant unity we have that great field which we may call The Will of Man. For man considered generically forms the

one connecting link between these two fields. As an individual, he is free to work with or against the great law of natural evolution; that is, constructively or destructively, and this fact emancipates him from the operation of the exact sciences. If the employer attempts to confine or repress this free spirit in the individual workman by exploitive methods, he will rebel and work against him. On the other hand, if the employer stimulates free self expression by encouraging conscious, i.e. thoughtful, participation, he will release such powerful creative forces within the organization that no obstacles will be too great to be overcome.

When most industrial institutions are organized along these lines, men will begin to realize that they are free only when they conform to natural law.

The main function of the administration division is to provide an environment in which the greatest possible number of men in the production divisions have the very best opportunity to express their individual creative power in constructive work. And it is the main function of the supply division to provide a sufficient quantity of the most suitable materials in order to develop the highest type of organized creative power.

There is no other way to eliminate industrial unrest, for man is not an animal, but a free, self-determining, mental center of consciousness, who exists that the universal life can deal with a particular situation in time and space, and thereby be enabled to evolve a material universe organized to express the one great individual life of which we are all a part.

VI. LABOR TRAITS AND CROWD BEHAVIOR

Labor groups are like other human groups in no more thorough way than in their "get together" instinct. Human beings have a deep instinctive craving for solidarity, for group loyalty, for devotion to a common cause. A mass of individuals whose everyday experience gives them something fundamental in common respond to a basic psychological drive by joining some definite party, club, association or union. The energies of the herd instinct are among the most compelling and inexhaustible of all the instincts. Industry has been reluctant to admit the power of this natural energy in labor. It has been frequently taken for granted that policies to keep the workers from joining labor groups could abolish the herd instinct. From the standpoint of any number of business men, the individualistic laborer must be preserved at any cost. In this attitude, they misconceive the grip of a natural human tendency toward group action and group loyalty on the part of the workers, with results that are measured in terms of thwarted instincts, industrial bitterness, and smothered unrest. Psychology brings to business the fundamental message that the impulse to feel, think, plan, work and act as a herd, as a labor group cannot be killed, but that it can be guided, directed and controlled in ways which make for good will and efficiency. Any policy of management aimed at smashing the group feeling of a community of workers and at undermining the sense of solidarity of working groups leads to a needless industrial bitterness. Sound constructive policies undertake to bring out the great latent sources of energy, loyalty, morale in the herd instinct and to relate them to industrial output and industrial contentment.

Where such policies as the open shop, local collective bargaining, injunctions or company unions are undertaken for the primary purpose of blocking the "stick together" impulses of labor groups, managers do indeed thwart certain forms of expression for those impulses. But unless managers are able to

direct these impulses into safe and efficient forms of expression, to thwart them is almost sure to store up large troubles for the future. The herd instinct demands expression and unless employers are ingenious enough to devise sound methods of expression, the instinct will reappear in forms of industrial antagonism and warfare. This psychological lesson is fundamental, and it is written large in the industrial experiences of this country and of European countries during the last quarter of a century.

THE CHARACTERISTICS OF HUMAN HERDS¹

It is desirable perhaps to enumerate in a summary way the more obvious gregarious characters which man displays.

1. He is intolerant and fearful of solitude, physical or mental. This intolerance is the cause of the mental fixity and intellectual incuriousness which, to a remarkable degree for an animal with so capacious a brain, he constantly displays. As is well known, the resistance to a new idea is always primarily a matter of prejudice, the development of intellectual objections, just or otherwise, being a secondary process in spite of the common delusion to the contrary. This intimate dependence on the herd is traceable not merely in matters physical and intellectual, but also betrays itself in the deepest recesses of personality as a sense of incompleteness which compels the individual to reach out toward some larger existence than his own, some encompassing being in whom his perplexities may find a solution and his longings peace. Physical loneliness and intellectual isolation are effectually solaced by the nearness and agreement of the herd. . .

2. He is more sensitive to the voice of the herd than to any other influence. It can inhibit or stimulate his thought and conduct. It is the source of his moral codes, of the sanctions of his ethics and philosophy. It can endow him with energy, courage and endurance, and can as easily take these away. It can make him acquiesce in his own punishment and embrace his executioner, submit to poverty, bow to tyranny, and sink without complaint under starvation. Not merely can it make him accept

¹ William Trotter, *Instincts of the Herd in Peace and War*. p. 112-20. T. Fisher Unwin. London. 1916.

hardship and suffering unresistingly, but it can make him accept as truth the explanation that his perfectly preventable afflictions are sublimely just and gentle. It is in this acme of the power of herd suggestion that is perhaps the most absolutely incontestable proof of the profoundly gregarious nature of man. . .

3. He is subject to the passions of the pack in his mob violence and the passions of the herd in his panics. These activities are by no means limited to the outbursts of actual crowds, but are to be seen equally clearly in the hue and cry of newspapers and public after some notorious criminal or scapegoat, and in the success of scaremongering by the same agencies.

4. He is remarkably susceptible to leadership. This quality in man may very naturally be thought to have a basis essentially rational rather than instinctive if its manifestations are not regarded with a special effort to attain an objective attitude. How thoroughly reasonable it appears that a body of men seeking a common object should put themselves under the guidance of some strong and expert personality who can point out the path most profitably to be pursued, who can hearten his followers and bring all their various powers into a harmonious pursuit of the common object. The rational basis of the relation is, however, seen to be at any rate open to discussion when we consider the qualities in a leader upon which his authority so often rests, for there can be little doubt that their appeal is more generally to instinct than to reason. . .

MODERN INDUSTRY CALLS FOR VAST HUMAN ASSOCIATIONS ¹

A profound development in our economic system apart from control of capital and service during the last score of years has been the great growth and consolidation of voluntary local or national associations. These associations represent great economic groups of common purpose and are quite apart from the great voluntary group created solely for public service. We have the growth of great employers' associations, great farmers' associations, great bankers' associations, great labor associations, all

¹ Herbert C. Hoover. Address before the Federation of Engineering Societies, Washington, D.C. November 20, 1921.

economic groups striving by political agitation, propaganda and other measures to advance group interest. At times they come to sharp conflict with each other and often enough charge each other with crimes against public interest.

And to me the one question to the successful development of our economic system rests upon whether we can turn the aspects of these great national associations toward coordination with each other in the solution of national economic problems or whether they shall grow into groups for violent conflict. The latter can spell breakdown to our entire national life. . .

One of the great conflicts rumbling in the distance is that between the employer on one side and organized labor on the other.

We hear a great deal from extremists on one side about the domination of the employer and on the other about the domination of organized labor. The tendency to domination probably exists among extremists on both sides. One of the most complexing difficulties in all discussion and action in these problems is to eliminate this same extremist. There are certain areas of conflict of interest, but there is between these groups a far greater area of common interest and if we can find measures by which through cooperation the field of common interest can be organized, then the area of conflict could be in the largest degree eliminated.

GROUP SPIRIT AND GROUP MIND ¹

In considering the mental life of a patriot army, as the type of a highly organized group, we saw that group self-consciousness is a factor of very great importance—that it is a principal condition of the elevation of its collective mental life and behavior above the level of the merely impulsive violence and unreasoning fickleness of the mob.

This self-consciousness of the group is the essential condition of all higher group life; we must therefore study it more nearly as it is manifested in groups of various types. It is unfortunate that our language has no word that accurately translates the French expression, *esprit de corps*; for this

¹ William McDougall. *The Group Mind*. G. P. Putnam's Sons. New York and London. 1920.

conveys exactly the conception that we are examining. I propose to use the term group spirit as the equivalent of the French expression, the frequent use of which in English speech and writing sufficiently justifies the attempt to specialize this compound word for psychological purposes.

We have seen that, in virtue of the sentiment developed about the idea of the army, all its members exhibit group loyalty; it is only as the sentiment develops about the idea that this idea of the whole, present to the mind of each member, becomes a power which can hold the whole group together, in spite of all physical and moral difficulties. We see this if we reflect how armies of mercenaries, in which collective sentiment is lacking or rudimentary only, are apt to dissolve and fade away by desertion as soon as serious difficulties are encountered.

The importance of the collective idea and sentiment appears still more clearly, when we reflect on the type of army which has generally proved the most efficient of all—namely, an army of volunteers banded together to achieve some particular end. Such an army (for example the army of Garibaldi) owes its existence to the operation of this idea in the minds of all. The idea of the army is formed in the mind perhaps of one only (Garibaldi); he communicates it to others, who accept it as a means to the end desired by all of them individually. The idea of the whole thus operates to create the group, to bring it into existence; and then, as the idea is realized, it becomes more definite, of richer and more exact meaning; the collective sentiment grows up about it, and habit and formal organization begin to aid in holding the group together; yet still the idea of the whole remains constitutive of the whole.

Any group that owes its creation and its continued existence to the collective idea may be regarded from the psychological standpoint as of the highest type; while a fortuitously gathered crowd that owes its existence to accidents of time and place and has the barest minimum of group self-consciousness is of the lowest type. Every other form of association or of human group may be regarded as occupying a position in a scale between these extreme types; according to the relative predominance of the mental or the physical conditions in its origin and continuance, that is to say, according to the degree in which its existence is teleologically or mechanically determined.

The group spirit, the idea of the group with the sentiment

of devotion to the group developed in the minds of all its members, not only serves as a bond that holds the group together or even creates it, but, as we saw in the case of the patriot army, it renders possible truly collective volition; this in turn renders the actions of the group much more resolute and effective than they could be, so long as its actions proceed merely from the presence of an impulse common to all members, or from the strictly individual volitions of all, even though these be directed to one common end.

Again, the group spirit plays an important part in raising the intellectual level of the group; for it leads each member deliberately to subordinate his own judgment and opinion to that of the whole; and, in any properly organized group, this collective opinion will be superior to that of the average individual, because in its formation the best minds, acting upon the fullest knowledge to the gathering of which all may contribute, will be of predominant influence. Each member, then, willing the common end, accepts the means chosen by the organized collective deliberation, and, in executing the actions prescribed for him, makes them his own immediate ends and truly wills them for the sake of the whole, not executing them in the spirit of merely mechanical unintelligent obedience or even of reluctance.

In a similar way the group spirit aids in raising the moral level of an army. The organized whole embodies certain traditional sentiments, especially sentiments of admiration for certain moral qualities, courage, endurance, trustworthiness, and cheerful obedience; and these sentiments, permeating the whole, are impressed upon every member, especially new members, by way of mass suggestion and sympathetic contagion; every new recruit finds that his comrades accept without question these traditional moral sentiments and confidently express moral judgments upon conduct and character in accordance with them, and that they also display the corresponding emotional reactions toward acts; that is to say, they express in verbal judgments and in emotional reactions their scorn for treachery or cowardice, their admiration for courageous self-sacrifice and devotion to duty. The recruit quickly shares by contagion these moral emotions and soon finds his judgment determined to share these opinions by the weight of mass suggestion; for these moral propositions come to him with all the irresistible force of opinion held by the group and expressed by its unanimous

voice; and this force is not merely the force derived from numbers, but is also the force of the prestige accumulated by the whole group, the prestige of old and well-tried tradition, the prestige of age; and the more fully the consciousness of the whole group is present to the mind of each member, the more effectively will the whole impress its moral precepts upon each.

And the organization of the army renders it possible for the leaders to influence and to mould the form of these moral opinions and sentiments. . .

But the main point to be insisted on here is that the raising of the moral level is not affected only by example, suggestion, and emotional contagion, spreading from those in the positions of prestige; that, where the group spirit exists, those enjoying prestige can, if they wish, greatly promote the end of raising the moral tone of the whole by appealing to that group spirit; as when Lord Kitchener asked the men to obey his injunctions for the sake of the honor of the British army.

And the group spirit not only yields this direct response to moral exhortation; it operates in another no less important manner. Each member of a group pervaded by the collective sentiment, such as a well-organized army of high traditions, becomes in a special sense his brother's keeper. Each feels an interest in the conduct of every other member, because the conduct of each affects the reputation of the whole; each man, therefore, punishes bad conduct of any fellow-soldier by scorn and by withdrawal of sympathy and companionship; and each one rewards with praise and admiration the conduct that conforms to the standards demanded and admired. And so each member acts always under the jealous eyes of all his fellows, under the threat of general disapprobation, contempt, and moral isolation for bad conduct; under the promise of general approval and admiration for any act of special excellence.

GROUP RESTRICTION OF OUTPUT¹

What about restrictions of output? Everybody knows that in good times working people "lay down" on the job, no matter

¹ John R. Commons. *Trade Unionism and Labor Problems*. 2d ser. p. 6, 7, 9. Ginn and Company. 1921.

whether organized workers or not. People do not work as hard in good times as they do in hard times. We have the curious paradox that in good times, when we ought to increase the output, labor restricts the output; and in hard times, when we don't want people to work so hard and increase the supply of production, then they work the hardest. A business man does not conduct his business in that way. In good times, when prices are going up, he tries to increase his output; in hard times, when prices are falling, he tries to restrict his output—he does not buy more than he can sell. In other words, labor works just the opposite of business. In good times, when prices are up, then is when labor “lays down” on the job and refuses to increase the output and keep up the supply. In hard times, when the demand has fallen off, then is when labor works the hardest and turns out the most production. It surely seems that we have been going on a wrong hypothesis in dealing with labor. It works out all right in dealing with marketing and commodities, but labor seems to work just the opposite.

We have been going on the theory that in order to get efficiency, in order to get output, in order to get laborers to work, there must be some kind of a penalty held over the workman—the penalty of unemployment, the penalty of being discharged if he does not work, if he does not do his duty, if he is not on the job. It is then that he suffers the penalty of being discharged from his job. Our method has been the rough method of disciplining labor by the penalty of unemployment.

That penalty does not work in good times; it works too much in hard times. In good times the workman is not afraid of unemployment. What's the use? If he is discharged, he can go across the street and get another job. In hard times, when we don't want so much produced, then he works hard because he is afraid of unemployment and cannot go across the street and get another job. The psychology of labor, both in good and in hard times, is fundamentally the psychology of a class of people whose life is insecure, who are subject to rough methods of discipline. We cannot understand the problem of dealing with labor unless we understand that fundamental fact of insecurity of employment. It is just as vicious in good times as it is in hard times. In good times the workman's high wages are an injury to him; he gets too much money, and he does not know what to do with it and spends it extravagantly,—burns it up,—and when the hard times come he has nothing to fall back

upon. The fluctuation of earnings—great earnings in good times, falling off in hard times—is demoralizing to the character of working people.

If we have to depend upon the rough method of discharge for getting efficiency, then we are going to keep labor continually unstable and uncertain, and the character of the workingman will not rise to the occasion of modern industry.

Now capitalism is to blame because it has not offered, as yet, to labor that security of the job which it has to the investors in the security of their investments. Capitalism is threatened because it has not furnished the working people a similar security to that which it has furnished to the investors. The workmen are getting the idea throughout the world that the elements that produce wealth are the workmen and the management; and we have the Plumb plan, in which two million workers in the United States come forth to oust the credit system and let simply management and labor produce the wealth of the country. They would destroy the thing upon which the credit of the railroads is built, because they think that the producing elements are management and labor.

Well, that is much the same idea that they have in Russia, and that is the fundamental notion of modern laboring people spreading throughout the world. They do not appreciate that modern capitalism is based on faith in the future; they have not themselves been given that same security. Capitalism to them is autocracy and insecurity. They have tried to get security by rough methods. Trade-unionism, closed shop, union shop, and so on are their methods of obtaining security of the job. Not until the capitalistic system, not until the great financial interests that control this country, have learned that it is just as important to furnish security for the job as it is to furnish security for the investment will we have a permanent provision for industrial peace.

GROUP BEHAVIOR AND LABOR INCENTIVES ¹

The Great War brought it sharply to our attention that "men work together." In the war, all society worked at one definite,

¹ L. C. Marshall. Address on Incentive and Output before the Convention of the Industrial Relations Association of America, at Chicago, May 19, 1920. *Journal of Political Economy*. Vol. 28. p. 713-14, 715-16, 727-9, 732-4.

almost visible, task. In performing that task we soon found that modern war is no story of quickly prepared armies leaping from spring boards to occasional battles. It involved welding together to accomplish an objective, all the people and all the forces of the nation concerned; its men, women, and children, its manufactures, its schools, its churches—everybody and everything. In time of war, men must work together.

But it is generally true that men must work together in time of peace. True, the objectives of peace are not so simple and tangible as those of war, and accordingly our cooperation is not so evident. The organization of our productive resources for the gratification of human wants is a much more vague and many-sided process than their organization for the slaughter of human beings. Partly because of this vagueness of peace-time objectives, we often fail to see clearly that the methods used to attain these objectives are similar to those used to attain the objectives of war. Men are brought to work together.

Fundamentally, the problem of working together today is one of knitting together the specialists and specialized institutions of modern society. In the interests of increased production capacity we have specialized our capital, our technological processes, our workers, our knowledge, our management, our producing territories—everything. In the case of the workers, this has meant that the non-specialized worker of earlier ages has become the worker in a single trade or occupation, as, for example, the lawyer, the physician, or the all-round mechanic; and these, in their turn, have been split up into the workers who concern themselves with only one trade or occupation, as, for example, the diagnostician, or the ordinary machinist; and these process specialists have, in their turn (provided the market has been wide enough to make it profitable), been split up into workers in detailed operations, such as the narrow machine specialist. Now, these thousand upon thousand of specialists must be knitted together into a great producing mechanism, if society is to gratify its wants and secure all those intangibles making for human progress. So also must the specialized capital, knowledge, and management be knitted together.

* * *

As much as forty years ago there had clearly emerged, for those who cared to see, a strong suspicion shared both by

workers and management that all was not well with wage as a sole incentive. Towne and Taylor, who sensed many things ahead of their time, saw the situation. It is no accident that one of Taylor's early contributions concerned itself with methods of wage payment and that he sought, at least, a wage which was "psychologically correct." Others in the management group saw it also, but few so clearly. In a bewildered, trial-and-error way they tinkered with other devices—with profit sharing, with welfare work, with this and that miscellaneous practice—and their tinkering was a confession of the inadequacy of the wage incentive acting alone or largely alone. The "will to do" that meant increased output at lowered cost of production was not present among the workers. ✓

And this might have been expected. The spectacular events, for example, the trust movement and the passing of the frontier, which marked the coming in of our current stage of industrialism sank into the minds of the workers as a warning that the day of automatic and easy rise to responsible positions had really passed. There came to them a realization of what the forces of the Industrial Revolution had, unguided, wrought. And they were not minded to acquiesce, for belief in a beneficent "natural order" of things had yielded, thanks to the influence of Darwin, to an evolutionary philosophy which demanded improvement and it yielded the more readily because many happenings, had, as we have seen, engendered distrust, suspicion, and fear. In default of intelligent action by either management or society, the workers turned naturally and properly to a device of their own with which they had long experimented—the union. That their earlier, and indeed their present, demands were formulated in terms of the gain spirit which seemed to them the characteristic thing in industry, that they sought and still do seek more wages, and more and more, deceives no one who watches more than surface indications. Wages alone will not bring contentment in such an impersonal specialized society as ours. Wages alone cannot bring men to work effectively. It, unaided, will not remove sourness, suspicion, and hostility. Powerful as it is, valuable as it is when wisely used, it must be linked with the forces making for pride of workmanship, interest in work, knowledge of worth-whileness to society, security of economic and social position, and sense of responsibility, before we shall unlock those vast resources of human energy which *

now lie dormant because we have not given thought to the fashioning of keys which will free "the will to do."

Let us not deceive ourselves concerning the significance of this "will to do." It involves no mere unthinking performance of "an honest day's work," whatever that may mean. It implies the calling forth of those latent powers which emerge in the joy of doing, and doing understandingly—in the joy of intelligent service. The magnitude of those latent powers we cannot even guess, though hints have been given each of us in our own experiences, and the sense of waste is appalling when we reflect that such powers grow by utilization. Perhaps, both inside and outside the factory, we are not realizing on one-quarter of the human resources which would be called into being if men worked together understandingly with a real "will to do,"—perhaps not one-tenth, perhaps not one-twentieth. Who knows? We merely know that the waste is enormous.

Let us not deceive ourselves, either, concerning the difficulties in calling forth this will to do. Generations of sour distrust must be lived down and that cannot happen until the sources of distrust have been removed. Even after the sources of distrust have been removed, there must yet come understanding, and this involves both knowledge and appreciation of the place of industry and of specialists in social progress. Not only are the difficulties great, but cooperation in solving them will come grudgingly. The prevailing attitude of hard-headed management is doubtful, if not frankly antagonistic, toward such an enterprise. The prevailing indifference of society at large (witness the lack, in our elementary and secondary school systems, of studies leading to an understanding of our social relationships) bodes ill for effective cooperation by society, notwithstanding the present hectic interest in "Americanization." The prevailing attitude of the worker, one of indifference tempered with distrust and hostility, means much cultivation before even seeds can be sown. Nevertheless, the game is worth the candle. Even if he can make a few staggering steps toward the ultimate goal, the personnel manager must keep it before him. Men must be brought to work together effectively, and full effectiveness can come only with the will to do. Administration of incentives must be in terms of that outstanding fact.

* * *

Few will require evidence to convince that we have made the

merest beginnings of scientific knowledge concerning good physical location, good physical plant and equipment, good human machines, both mentally and physically, good "will to do," good organization and administration, good social environment. It so happens that our knowledge is particularly limited in the field with which this discussion is largely concerned—the development of a good "will to do," but in all these fields there lies some challenge to our keenest thought.

To begin with, we know very little concerning the psychological nature in terms of the effectiveness of various incentives. True, there are frequent oracular utterances on the subject by successful business men—utterances which seem, upon analysis, to "carry" primarily because of the dollars behind them. There is also some preliminary work which has been done in the field of instincts, but the well-poised psychologists of today will tell us that the deeps of human motivation are still uncharted.

Furthermore, our knowledge is equally limited with respect to the appropriate use of technical devices, designed to call the will to do into being. Wage is generally regarded as the main device, but what do we really know of the methods of wage payments? We know that the various methods are worked out in terms of a basic rate, but what is the right basic rate—right in calling forth the will to do? Is it the current rate in the community? Suppose the current rate is not sufficient to shelter, clothe and nourish to the point where he is a good physical machine; will it not pay society and the manager to lift that current rate to a physical efficiency basis? When it is attained, may it not pay society and the manager to go beyond if it calls forth the will to do? What is the current rate of wages, anyhow, but a resultant of social forces, some of which are woefully inefficient, not to say positively harmful? But perhaps the right wage is a function of the manager's costs. What does the average manager know about his costs and especially about the causes and conditions lying back of those costs? Even when he does know, does what he can afford to pay give any conclusive finding with respect to what he ought to pay to call forth the will to do? But perhaps the right wage is a function of a right standard of living. At the best, would this do more than to guide to the right minimum wage? And what is a good standard of living? Does it mean a good standard for a single worker, or for a family of three, or of five, or of fifteen? And what

does a "good standard" mean anyway? We shall do well to admit that we are in the stage of elementary thinking concerning wage payment as a constructive force in industry. Neither our economists, nor our psychologists, nor our uplifters, nor our hard-headed business men have solved the problem. Barely have they stated it.

What is true of wage payment is equally true of the other technical devices for developing the will to do. Most of them are in the experimental stage and there they are likely, with minor improvements, to remain until more progress has been made in our understanding of the psychological nature of man. What is true in the field of the will to do is almost equally true in the other fields connected with abundant output. We are in the merest beginnings of exact knowledge of such matters and research is a vital necessity.

The existence of this organization, the Industrial Relations Association of America, and the interest attaching to its activities are signs of the times. They indicate a change of emphasis. The great importance of the technological processes of industry is still recognized. But there is to be, in addition, an increased attention to the human side of industry. It was made inevitable by the development of the social sciences, by the spread of an evolutionary democratic philosophy, by the growth of general education, by the rise of a new spirit among the workers, and by the necessity of lower costs in industry. In response to these developments there has appeared in industry a new functionary, the personnel manager. The duties which have been sketched as falling to his lot are not duties appropriately bestowed upon a weakling or upon a clerk whose soul has no aspirations beyond blanks, forms, and bootlicking. They are the duties of a full grown man who sees that his position is at the strategic point of industry, since persons enter into all processes, and who accordingly realizes that he, more than other lieutenants in industry, must contribute to all the conditions precedent to abundant output. They are duties calling for a kind of administrative vision which may almost be called statesmanlike, for they are closely connected with the welfare of all society. The greatest challenge of the day is before the manager of personnel. May he measure up to his opportunities.

THE CONSEQUENCES OF SOLIDARITY IN
LABOR GROUPS¹*The Psychology of Labor's Attitude*

We have reached a point in our argument where industrial psychology, as conceived in these lectures, makes contact with what has been called social psychology. For the phenomenon to be considered here is a widespread attitude of will; and, in order to understand this, it is necessary to examine the kind of effect that present social arrangements have upon the mental life of a certain large body of persons.

As we read lists of complaints made by labor against scientific management, we can hardly help feeling, I think, that all the various items represent attempts to express something which, even at the end, remains unexpressed. Side by side are placed objections that are trivial and important: as though the important objections were not adequate to condemn the system. A charge is made: labor stands back for a moment, regarding its accusation. "Yes, that certainly," it says, "but also this too"; and another charge is made. This also proves insufficient, and another, and still another, is made; yet the accuser ever seems to feel that all his charges are inadequate. Hence, he repeats them in a variety of ways, and rejects none as too small, provided it seems to tell against the system.

To understand this phenomenon we must begin by recalling a very general proposition, which expresses an empirical law of psychology. This is that a person tends to be indifferent to whatever does not seem to him to affect his dominant interest or purposes. The fact thus indicated is so well known that I shall not pause to illustrate it: I shall proceed at once to a consideration of the form in which it occurs among industrial workers.

It is not difficult to state where the dominant interest of the worker lies. He wishes to have a comfortable home, and a family; and to obtain security against sickness, unemployment, and want in old age. In a sense, no doubt, these aims are universal among men; but those to whom "fortune" has made them easy of attainment often find their interests in other things. It

¹ Bernard Muscio. By Permission, from *Lectures on Industrial Psychology*. p. 265-71. Published by E. P. Dutton and Company. New York. 1920.

is because the worker feels that these common human goods are only just within his reach that his whole attention is turned to attempts to secure them.

It thus comes about that the labourer is initially indifferent to the whole efficiency movement. What will it do for him? Will it secure for him the things that he most desires? Will it banish from his life the fear of the fall of the Damoclean sword of sickness and unemployment? Will it assure him of safety when he is old? If it will do these things, he will be interested in efficiency, and cooperate in any attempt to make it universal. If it will do none of these things, then what is efficiency to him? As it does not seem to help him to secure what he wants, the worker finds no interest in the efficiency movement.

And there the matter might rest but for the fact that efficiency is soon brought into very close contact with the worker. What he then gradually comes to feel is that it will not do to treat this thing with indifference, since it seems, so far from aiding him to gain security, to be removing from him such means of security as he possesses. Scientific management thus comes to excite both his anger and his fear.

There are here two chief facts to be noted.

The first is that scientific management in practice has often been positively painful to the worker. This does not condemn the system in its essentials; but it explains much of labour's hostility toward it. Labour has known scientific management as a system under which it was often necessary to speed up; and the "driven" feeling in such circumstances is painful, and at a certain stage becomes intolerable. Anger is excited against the thing that causes the rush; and as the most obvious features of the new system were usually the stop watch and the premium, hostility was shewn to these.

Even where speeding up did not occur, conditions of work were often rendered unpleasant because of the insistence upon "task" work. This question is a highly difficult one. It would seem that any satisfactory organization of society demands it. If we are to depend upon one another, we must know just when we can be certain to get this or that commodity. The bread carter must come at his usual hour, or we are annoyed; yet when the bread carter regularly reaches the various points in his rounds at specified times, he is essentially on "task" work. So is the newspaper editor who must have his leader ready by

twelve o'clock; the lecturer who must have his lecture prepared by a certain hour; the student who must know his subject by December.

In the workshop, "task" work is the condition of there being no unnecessary delays. If one workman wants a piece of mechanism by ten in the morning, some other workman must have that piece of mechanism ready for him at that time. It might be possible to attain the required end by having always ready several pieces of each kind of mechanism; but even so, it is probably necessary to know approximately when any workman will finish his job. Practically, this means that the time allowed for a job becomes fixed.

Now, it is definitely unpleasant to have to work continually with one eye on the hands of the clock. This is so even when the time allowed for the work is reasonable. Men of nervous temperament,—and we should not forget that modern machinery with its speed and noise has a considerable effect upon the sensitive nervous system,—are sometimes almost incapacitated by the consciousness that their work must be ready at a given time. When the times set for work are too short, however, the results upon workmen may be serious; but even supposing that they have always been fairly reasonable in scientific management institutions, I think we can trace some hostility of labour to the system to the mere fact that they have been set, and to the effects of this on the experiences of workmen.

The second fact is that the practice of scientific management has led to the workmen experiencing a sense of loss of power or insecurity. This is perhaps the chief point to be noted, for it has excited fear, and hence hostility. This loss of power is due to the fact that, under the new system, the individual has always faced the employer as a unit. His bargaining capacity has depended entirely upon what he happened to have in himself. If he were the man the employer wanted, well and good; he received good wages and his ego expanded itself; but if, for any reason, the employer presently found him unnecessary, then he must go at a moment's notice, and try individually to bargain with some other employer. In all this it is quite true, as Mr. Frey says, that the worker is at the mercy of an individual employer's conception of what is fair and just. If it ever seemed to a particular worker that he had been treated unfairly, he could not lay the matter before his union, and thus get redress

if injustice had been done. The employer insisted on dealing with the men separately. What would have happened, indeed, had a bicycle-ball inspector's union demanded that a certain girl should not be dismissed, quick reaction-time or not? Surely the scientific manager's calculations would have gone all awry!

But, you say, why did not the men stick together? Why did they consent to be treated separately? The answer is simple: because of the inducement held out in the form of increased wages. Labour, in fact, has come to feel that the increase in wages was offered to destroy the protective rules of unionism. This is not correct in fact; but it is correct in the result. It has been found that the spirit of solidarity among the men in scientific management workshops was always weak, if not dead. The new system emphasised the individualistic qualities of the men. This meant that if there were a genuine grievance, at any time, on the part of some operatives in a workshop, their fellow workers were disinclined to support them, because of the fear that by so doing they would possibly lose favour with the management. Since the solidarity of labour has been its strength, a system that weakens labour solidarity will naturally be regarded with hostility by discerning workmen. Mr Taylor claimed that no strike had ever occurred in a scientific management institution. The Hoxie commission discovered that this was not entirely exact, although there did seem to be relatively few strikes under the system. Labour explains this by supposing that the system interferes with labour solidarity.

Fear, then, excited by a sense of lost power, and by the anticipation of a still greater loss of power in the future, seems to me the chief psychical management. It is because this fear never dies that labour's list of charges against the new system is never ended.

Is it impossible to remove the cause of this fear?

VII. THE PSYCHOLOGICAL PROBLEM UNDER SELF-ASSERTIVE MANAGEMENT

THE PRIMARY PRINCIPLES OF SELF-ASSERTIVE MANAGEMENT ¹

As stated and repeated publicly, we do not combat, though we do not contract or deal with, labor unions as such. Personally, I believe they may have been justified in the long past, for I think the workmen were not always treated justly; that because of their lack of experience or otherwise they were unable to protect themselves; and therefore needed the assistance of outsiders in order to secure their rights.

But whatever may have been the conditions of employment in the long past, and whatever may have been the results of unionism, concerning which there is at least much uncertainty, there is at present, in the opinion of the large majority of both employers and employees, no necessity for labor unions; and that no benefit or advantage through them will accrue to any one except the union labor leaders.

If a workman desires to join a labor union he is, of course, at liberty to do so, and in that case he should not be discriminated against by any "open shop" so long as he respects the rights of his employer and his co-employees and in every way conforms to the laws of the land. The "open shop," as heretofore publicly defined, is what we believe in and stand for.

☞ The workman, if he belongs to a labor union, becomes the industrial slave of the union. He has no power of initiative

¹ Judge E. H. Gary, Chairman of the Board of Directors of the United States Steel Corporation. Report at Annual Meeting of Stockholders, as reprinted in the New York Times, April 18, 1921.

or opportunity to apply his natural mental and physical capacity. If our own shops should become thoroughly unionized and all others likewise should recognize the unions, and the steel industry should become entirely organized, as the leaders have openly attempted, then the management would be in the hands of the unions.

The natural and certain effects of labor unionism are expressed by three words: Inefficiency, high costs. And be it remembered that in the end the general public, which is more interested in the selling prices of all products, must pay for extortionate, unnecessary and unreasonable costs of production. It is primarily, fundamentally and finally interested in the existence and conduct of labor unions.

The end sought by labor union leaders that, at least to which their efforts tend, means disaster and destruction.

It is noticeable that often times they seek to control politics, and openly, as a body, advocate the election or defeat of even the President of the United States. They oppose or favor legislation of divers kinds. They would regulate police departments. They would, if possible, fill all official positions and control the existence, repeal or change of laws. Worse than everything else, they would dominate the Supreme Court of the United States, our citadel of defense to person and property—to civilization itself. Many of them criticise and defy the final decisions of the courts. Very little has been written or spoken concerning this attitude, although it strikes at the very foundation of our great Republic.

In connection with collective bargaining, Judge Gary said:

From our inquiry and study we do not believe any plan for collective bargaining has been put in practice which is better than our own, or has been of real benefit to the employee or employer. On the contrary, it seems to us that experience, up to date, shows that both have been disadvantaged; that there has been less efficiency and higher cost, and that therefore the great consuming public has been injured.

However, it is proper to say that if a plan, better than ours, is developed and proven to be of real benefit to the employees

and, at the same time reasonable, practicable and fair to them, we will not be slow to adopt it.

A QUESTIONING OF THESE PRINCIPLES¹

There can be few leaders in industry who have a wider experience with labor than Judge Gary, or whose general conduct toward it has been more honorable, but if one may judge of his statement yesterday of the principles and policies of the United States Steel Corporation, his sense of the past of labor and his vision of its future are not quite adequate. . . That "in the long past" industrial laborers "were not always treated justly" is an extreme understatement. In comparison with the lives of mill operatives in the early nineteenth century negro slavery as practised in our South had aspects of marked humanity. This is not merely the verdict of philanthropists and social reformers. Scientists whose prime interest is in quite another field attribute to the early decades of the factory system a widespread weakening and debasement of the English national physique. Toward the bettering of such conditions philanthropy and common sense unaided might have accomplished something; but the decisive factor was the organization of unions and repeated strikes. Only by bringing the iniquities of the industrial system to the public consciousness vividly and dramatically was it possible to break down the might of vested interests and laissez-faire individualism. . .

When we can frame clear and practicable laws to govern the labor situation the crucial struggle will be past. Meantime, the unions are the best available means for preventing a relapse into the old slough of laissez-faire. . .

Judge Gary presents eloquently the Steel Corporation's policy of generosity in the matter of wages, of enlightenment in the matter of education and general welfare. His policy is abundantly humane. But would it have been quite what it is if there had been no pressure from without of organized labor?

¹ Editorial. New York Times. April 19, 1921. p. 16.

A PSYCHOLOGICAL ANALYSIS BY PRESIDENT WILSON'S SECOND INDUSTRIAL CONFERENCE ¹

There is, however, a feature of the present industrial unrest which differentiates it from that commonly existing before the war. It cannot be denied that unrest today is characterized more than ever before by purposes and desires which go beyond the mere demand for higher wages and shorter hours. Aspirations inherent in this form of restlessness are to a greater extent psychological and intangible. They are not for that reason any less significant. They reveal a desire on the part of workers to exert a larger and more organic influence upon the processes of industrial life. This impulse is not to be discouraged but made helpful and cooperative. With comprehending and sympathetic appreciation, it can be converted into a force working for a better spirit and understanding between capital and labor, and for more effective cooperation. . .

The guiding thought of the conference has been that the right relationship between employer and employee can be best promoted by the deliberate organization of that relationship. That organization should be within the plant itself. Its object should be to organize unity of interest and thus diminish the area of conflict, and supply by organized cooperation between employers and employees the advantages of that human relationship that existed between them when industries were smaller. Such organization should provide for the joint action of managers and employees in dealing with their common interests. It should emphasize the responsibility of managers to know men at least as intimately as they know materials, and the right and duty of employees to have a knowledge of the industry, its processes and policies. Employees need to understand their

¹ National Industrial conference, called by the President March 6, 1920.

William B. Wilson,
Chairman
Herbert C. Hoover,
Vice-chairman
Martin H. Glynn
Thomas Y. Gregory
Richard Hooker

Stanley King
Samuel W. McCall
Henry M. Robinson
Julius Rosenwald
George T. Slade
Oscar S. Straus
Henry C. Stuart

Wm. O. Thompson
Frank W. Taussig
Henry J. Waters
Geo. W. Wickersham
Owen D. Young
W. E. Hotchkiss
Henry R. Seager

relation to the joint endeavor so that they may once more have a creative interest in their work. . . The Conference finds that joint organization of management and employees where undertaken with sincerity and good-will has a record of success. . .

Employees need an established channel of expression and an opportunity for responsible consultation on matters which affect them in their relations with their employers and their work. There must be diffused among them a better knowledge of the industry as a whole and of their relation to its success.

The union has had its greatest success in dealing with basic working conditions, and with the general level of wages in organized and partly organized industries and crafts. It has also indirectly exerted an influence on standards in unorganized trades. There is no reason to suppose that in the future this influence will not continue.

Local problems, however, fall naturally within the province of shop committees. No organization, covering the whole trade and unfamiliar with special local conditions and the questions that come up from day to day, is by itself in a position to deal with these questions adequately, or to enlist the cooperation of employer and employee in methods to improve production and to reduce strain. Except for trades in which the union itself has operated under a system of employee representation, as it does in shipbuilding and in the manufacture of clothing and in other trades, these internal factors are likely either to be neglected or to be dealt with in a way which does not make for satisfactory cooperation. . .

The development and maintenance of right relations between employer and employee require more than mere organization. Intelligent and wise administration is needed for all those problems of production that directly touch the employee. Conditions affecting human beings in industry were, during the last generation, largely in charge of men whose special training had been devoted to the mechanical side of production. Much study was given to the machinery and processes upon which men worked. But the factors that contribute to the broader human development and satisfaction of the employee and that lead to increased productivity were too nearly neglected. . . The right concept of human relations in industry, which should be the primary impulse of management, is of full value only when it

permeates the entire administrative force. Far-sighted executives testify to the advantage gained from careful and painstaking efforts to encourage and educate their foremen in the proper attitude toward employees. . .

The Conference is in favor of the policy of collective bargaining. It sees in a frank acceptance of this principle the most helpful approach to industrial peace. It believes that the great body of the employers of the country accept this principle. The difference of opinion appears in regard to the method of representation. . . The Conference believes that the difficulties can be overcome and the advantages of collective bargaining secured if employers and employees will honestly attempt to substitute for an unyielding contentious attitude, a spirit of cooperation with reference to those aspects of the employment relation where their interests are not really opposed but mutual.

IMPORTANCE OF THE CONTRIBUTION OF WORKERS' INTELLIGENCE TO MANAGEMENT ¹

The congestion of population is producing subnormal conditions of life. The vast repetitive operations are dulling the human mind. The intermittency of employment due to the bad co-ordination of industry, the great waves of unemployment in the ebb and flow of economic tides, the everpresent industrial conflicts by strike and lockout, produce infinite wastes and great suffering. Our business enterprises have become so large and complex that the old, pleasant relationship between employer and employee has, to a great extent, disappeared. The aggregation of great wealth with its power for economic domination presents social and economic ills which we are constantly struggling to remedy. . .

We must take account of the tendencies of our present repetitive industries to eliminate the creative instinct in their workers, to narrow their field of craftsmanship, to discard entirely the contribution to industry that could be had from their minds. Indeed, if we are to secure the development of our people we cannot permit the dulling of these sensibilities. . .

¹ Herbert C. Hoover. Address before the Federation of Engineering Societies, Washington, D.C. November 20, 1920.

If we are to secure increased production and an increased standard of living, we must keep awake interest in creation in craftsmanship and contribution of the worker's intelligence to management.

THE RELATIVE EFFICIENCY OF THE DEMOCRATIC METHOD ¹

The great reason why an industry fascinates the employer but bores the employee is, in my opinion, that human psychological laws are neglected.

I hope that psychologists may, some day, in cooperation with economists, help to a truer understanding of the nature of human freedom. What we liberty lovers are really groping for is, apparently, not to do as we *think* we please but to do what will actually please us after it is done; that is, to satisfy fairly well all of the great fundamental human instincts, of which there are many besides the instinct of self-preservation or of making a living. The workman not only longs for more pay, but he hungers and thirsts for other things which he cannot formulate, because so largely unconscious.

The problem of making manual workers contented, or as contented as the rest of us, or as contented as they can be, is not, therefore, a problem simply of the distribution of wealth. It is one of introducing, or re-introducing, certain fundamental motives into industry. Just as the large capitalist does not usually accumulate for his children but for the love of accumulating, and just as inventors (as Professor Taussig has shown) do not usually invent merely, or even chiefly, for money but for the love of inventing, so the workman can be motivated also by quite different motives from the ordinary pay-envelope motive. I refer to the creative and other impulses emphasized at this session by Mr. Robert B. Wolf and others, and by Miss Marot and Ordway Tead in their books, as well as a year ago in our Philadelphia meeting by the late Professor Carleton Parker (whose important pioneer work will, I hope, never be forgotten).

The war affords us a great object lesson here. Men previously

¹ Irving Fisher. Address by President of American Economic Association. American Economic Review, Supplement. Vol. 9. p. 17-19.

apathetic in the shop, under the money motive, have exhibited a wonderful eagerness to fight for their country with no wages to speak of and with no money bonus whatever. Again, when the armistice was signed, this wonderful "morale" shrank appreciably overnight. Still again, we find that many of the soldiers who return to work after the excitements of military life are actually spoiled as workmen. We must find ways of putting real "pep" into the worker—for his sake as well as others. . .

We economists ought to be able to play an important part, in cooperation with psychologists, employers, and employees, by studying this new movement, distilling out the essential truths it represents, and contributing constructive suggestions of our own. The psychologists and the religious workers helped vastly in creating our soldiers' morale. Cannot the morale needed in industry be secured with equal success? If we can and do secure it, it will be by making industry really democratic. And if we do secure it, the productivity of industry will be greatly increased because those who have its success at heart and put their own interest and initiative into that success will include the millions of workers and not merely the thousands of employers.

Here again the war teaches us a great lesson. The miraculous accomplishments of the United States were due not to a centralized organizing genius, such as created German military power in forty years, but to a decentralized cooperation whereby each citizen, of his own initiative, tried to do his "bit." Not only was the war a triumph of democracy over autocracy but it demonstrated the efficiency of the democratic method, that is, the method which relies on enlisting the active initiative, the enthusiastic interest and will to help, of the people. The Prussian method has failed and the Prussian method in American industry has failed and always will.

THE INSTINCTIVE FORCE BEHIND THE STRUGGLE FOR CONTROL ¹

The one thing that a patch-work of palliatives and concessions does not touch is the one thing that lies at the heart of the

¹ Glenn Frank. *The Politics of Industry*. p. 103, 109, 111. The Century Company. New York. 1919.

modern labor problem and gives to the modern labor movement its sustained and vibrant purpose, and that is the status of the worker in industry. . .

And the instincts of self-defense and self-interest, rather than conscious statesmanlike administration, have dictated and devised the policies and instruments that both capital and labor, with certain heartening exceptions, today employ in dealing with the issues of industrial relations. . .

Now, one thing lies coiled at the heart of everything I have pointed out, and that is that in the transfer from hand production or small scale industry to machine production or large scale industry the worker lost control of the instruments of production, lost control of the raw materials for production, lost control of the conditions under which production is carried on, lost control of the profits arising from production. And the history of the labor movement, from the time James Watt, in 1769, harnessed the expansive power of steam to human use and made possible machine production down to the present time, has been the story of labor's struggle to regain the fruits if not the facts of that lost control. To the cynical and the superficial the labor movement is a purely selfish struggle between a group called labor, trying to keep wages up, and a group called capital, trying to keep wages down; but it is essentially a competition for control, with a rich variety of meanings attached to that word. Specific demands, specific strikes for shorter hours and higher wages, aside from their immediate purpose, are part of this larger movement for a restoration of control, even in those instances where the leaders of such strikes are blind to the relation their immediate action bears to the larger movement.

The present system of regulating the relations between the parties to industry in the atmosphere of continuous class contest, latent or in action, from the public's point of view falls far short of the desirable. From the point of view of the intelligent self-interest of both capital and labor it is a costly and inadequate method of progress. It is important to remember, however, that this system was never planned as a desirable method of progress either by capitalists or labor leaders; it is the product of an instinctive evolution under the spur of self-defense and immediate self-interest.

THE HEALTHY ORGANIZATION OF THE LOVE
OF POWER¹

Industrial unrest is bound to continue just as long as the present state of mind and feeling of workers is generated by growing disparity between their participation in politics and their exclusion from industrial direction. Modern industry more and more stifles the deep creative impulses of the workers at the same time that it emphasizes how illusory is their political power and how unrelated to economic control. They listen to Mr. Bryan's apostrophe, "Behold! a Republic in which every man is a sovereign, yet no one cares to wear a crown," only to reflect that as to the essential circumstances of their lives they are but the instruments of needlessly blind chance under the direction of the heads of industry. It is an old story, but at this time we all of us need "education in the obvious more than investigation of the obscure." The last authoritative inquiry into industrial relations made in this country, with wide opportunities for observation and under the most favoring impulses of war, was thus reported to the President:

"Broadly speaking, American industry lacks a healthy basis of relationship between management and men. At bottom this is due to the insistence of employers upon individual dealings with their men. Direct dealings with employees' organizations is still the minority rule in the United States. In the majority of instances there is no joint dealing, and in too many instances employers are in active opposition to labor organizations. This failure to equalize the parties in adjustments of inevitable industrial contests is the central cause of our difficulties. There is a commendable spirit throughout the country to correct specific evils. The leaders in industry must go further, they must help to correct the state of mind on the part of labor; they must aim for the release of normal feelings by enabling labor to take its place as a cooperator in the industrial enterprise. In a word, a conscious attempt must be made to generate a new spirit in industry.

Here is the watershed of all the streams of discontent—all the streams that have rush and sweep and power and that will not be denied. And the vague gropings of workers for a

¹ Felix Frankfurter. *Yale Review*. Vol. 9. p. 229-33.

dignified participation in industry, for an adequate utilization of their creative faculties, have, of course, been intensified by the war. Generous ideas and glowing watchwords are highest-power explosives. Statesmen cannot regiment a nation behind the appeal to "democracy, liberty and justice" without compelling men and women to seek significance for these glorious concepts in their daily lives. The impulses aroused by a war waged to bring a new heaven and a new earth cannot be coerced to be content to have the unloveliness and the misery and the repression of the old earth left wholly unchanged.

This familiar analysis suggests its own familiar remedies.

Public opinion must exert its dormant dominance by a frank recognition that the unrest is not "un-American," is not destructive, should not be hunted like a wild beast or a pickpocket. Nor yet must it be looked upon as "belly philosophy." Of course, there are demands for more wages and less hours, but these are really minor issues. Not until there is a generous acceptance of the spiritual depths behind the present unrest will there be or should there be peace among us. Not until then can these depths attain secure and sensible direction. Must it be left to England first to solve the problem of industrial liberty as it was hers to give to the modern world political liberty? Signs are not wanting that she will be the pioneer, driven, perhaps by the spur of necessity. Surely, however, no one has stated the issue with more penetrating simplicity than the leading Conservative statesman, Lord Robert Cecil. He quotes the following passage from a speech by Mr. Smillie:

"The mine-owners have always told us, and you tell us now, if you hand the mines back to them for free competition amongst each other, that we have no right to a voice in the working conditions of the mines—no voice on the commercial side at all. They say, 'We invested our money in those mines and they are ours; you are merely our hands.' Now I say, 'We invest our lives in those mines, which is of greater importance than the capital of the employer, and to that extent have a right to say as to what the conditions shall be, not merely the working conditions, but we are entitled to have some information on the commercial side of the thing also.'"

Lord Cecil comments upon this as follows:

"I believe that these sentences contain the essence of the industrial problem. It is not merely, or even chiefly, a question of wages or hours of labor. These things are important, but

they are not at the root of the present discontent. If it were so, you would find the gravest unrest in the worst paid occupations, which is notoriously not the case. I believe that a large part of the more extreme section of the labor world consists of men who were a few years ago the backbone of working-class conservatism—men who have done well in their trades and have the respect of their fellow workmen. . . . What these men complain of is not so much that the conditions of their work are bad as that they have no say in what these conditions should be.

"A man's labor is a part of himself, and not a mere commodity to be bought and sold in the market. He has a right to be consulted as to its disposal, and cannot give to another uncontrolled power over it without injury to his self-respect.

"It will no doubt be said that if the employees are to have a share in the management of industry it will mean a loss in efficiency, and since the real cure for industrial difficulties is increase of output, such a change would be a retrograde measure. The same argument has often been applied in the political world, indeed it is the mainstay of the defense of Kaiserism. Granted an absolute monarch of intelligence and probity, it is at any rate plausible to contend that this state will be administered more efficiently than it would be by any democracy. Nevertheless the world has decided against autocracy, and for good reasons. In the first place, history shows that really good despots are rare, and I suspect that the same is equally true of captains of industry; and, in the second place, the argument leaves out of sight the passion of mankind for liberty. Over and over again, we have seen men prefer a bad government for which they are responsible, and in which they have a share to a good government imposed upon them from above. And I believe the same is as true in industry as it is in politics. Moreover, industrial efficiency itself depends upon the good-will of the workers. Without their hearty cooperation the most skilled captain of industry is powerless."

"Not until we act on a generous acceptance of the fact that what is at stake is a redistribution of power from the autocratic direction of employers to the responsible participation of all who are involved in industry will we get out of the woods of feud and fury. Responsibility for delay in this peaceful adjustment must be made personal. The community must make it-

self felt. When President Hadley years ago urged social ostracism for social blindness he was merely invoking the pressure of opinion of those upon whom rests noblesse oblige. Other great employers must speak out and join Mr. H. P. Endicott when he says: "I cannot believe that the so-called employers' group (of the Presidents Industrial Conference) were fair representatives of all American employers. I cannot believe that these were the employers throughout this country who recognized during the war very strongly the fact that the employees were partners, and that without these partners we could not possibly carry on war or that without these partners can we possibly carry on peace. There were no signs anywhere that pointed to such thoughts coming from the employers' group." Industrial leaders must dissociate themselves from the leadership of Chairman F. P. Fish of the National Industrial Conference Board who, however able and admirable in other fields, is totally incapable of making the imaginative adjustment that modern industry demands. Those strong and powerful in the community, those most privileged by the opportunities and the immunities of life, must speak out so that they can be heard and not secretly criticise Judge Gary. As soon as Judge Gary hears from his own kind not pathetic praise but the truth of his revolutionary propaganda, and not until then, will Judge Gary cease to play autocrat and find justification because the Steel Trust is playing Lady Bountiful.

"We thus see that we must carry over into the field of industry the problems of politics. Government in industry, like unto political government, must be worked out where power and responsibility are shared by all those who are participants in industry as well as the dependent "public." The task is nothing less than devising constant processes by which to achieve an orderly and fruitful way of life."

SOME INSTINCTIVE REACTIONS OF DEFENSE BY LABOR ¹

The truth is that the outlook and ideals of this dominant type of unionism are those very largely of a business organization

¹ Robert F. Hoxie. Quarterly Journal of Economics. Vol. 31, 1916-17. p. 73-6.

Its successful leaders are essentially business men and its unions are organized primarily to do business with employers—to bargain for the sale of the product which it controls. It has found, however, by long and general experience that if it is to do business with the average employer or with associations of employers it must be prepared to fight. But throughout its history this fighting has been predominantly conducted with the purpose of forcing employers to recognize it as a business or bargaining entity. Its position and experience have been very much like that of a new and rising business concern attempting to force its way into a field already occupied by old established organizations in control of the market. Like the new business concern it has to fight to obtain a foothold. But from this to argue that it is organized for war is a complete *non sequitur*.—

A somewhat similar situation has existed in regard to the matter of output. Business unionism has recognized, in general, the evils of restriction and has been willing to allow and even encourage the introduction of new machinery and improved processes and methods, and to sanction increased effort and productiveness on the part of its members up to reasonable physiological limits, provided it could be guaranteed that the improved methods and the increased exertion and output should not be made the means of lessening the share of the workers in the product or forcing upon them lower wage rates and inferior conditions of employment. But here again it has found the average employer or employers' association standing in the way. It has been taught by long and bitter experience that employers could and would make use of improvements and increased output by the workers not only to seize all the gains but even to reduce the actual rates and returns to the workers.

The fact is that despite all theorizing to the contrary, the wages of workmen under the unscientific conditions that have prevailed in industry are not determined automatically by specific output or by supply and demand, but immediately by a process of bargaining. The two most important factors in determining the outcome of this bargaining process have been the customary normal or standard day's work and the customary standard of living of the workers concerned. These have been the practical standards of right, justice and expediency most generally considered. In bargaining between employer and workman, as it has generally taken place in the past, if the employer could make

it appear that, under the existing conditions, the workers were not producing up to the standard day's work, he had a strong case to show that wages ought to be lowered or that more work ought to be done for the same pay, which amounts virtually to lowering the wage. If, further, the employer could make it appear that, at the given wage rate, or on the basis of the standard day's work, the workers could secure a standard of living higher than that customary with them, he had a strong case to show that the wage rate ought to be lowered, or, at least, that it should not be increased. In a contest of this kind the employer has been fairly sure of the support of public opinion, arbitrators, the police and the courts.

Now the workers have been taught by long experience that the average employer is constantly seeking to take advantage of these facts to secure an increase of the output *and at the same time to lessen the share and the amount of the product going to the workers*. Thus when new machinery and methods are introduced, at the old wage rates and under the old conditions of work, the laborers are able to secure earnings more than sufficient to maintain their customary standard of living, and this makes a basis for lowering of rates or at least of a refusal to increase wages and improve the conditions of work. Where competition is keen, he has usually been able to carry this off by adding to the arguments stated above that profits have to rise or that they have positively declined as a result of the improved methods. Where competition has been absent, i.e., where a combination has controlled the goods market, the employer has usually been strong enough to carry his point regardless of facts and arguments. Thus the new machinery and methods have generally not improved the wages and the conditions of the workers *immediately concerned* and, as a matter of fact, have not infrequently lowered them, especially where these improvements have created conditions of increased competition among the workers, as they very generally have done.

Turning now to the other aspect of the matter—increased effort and productiveness on the part of the workmen where no improvement in methods has taken place—the experience of the workers has been that the old line employer has been constantly endeavoring to speed them up and over-reach them by the creation of “swifts” and “bell-horses,” through the introduction of “company men,” by threatening and coercing individuals whose

native resisting power was weak or whose circumstances were precarious, and by offering secret premiums or bonuses. When through these methods some man or group of men have been induced to speed up, their accomplishment has been taken as a standard for all to attain. Thus, in the case of day work, the accomplishment of the strongest and swiftest was the goal set for all, if wages were not to be lowered, while in the case of the piece work the rate of wages tended to be lowered by these exceptionally rapid workers, because at a given rate it could be shown that they could make more than was necessary to maintain their customary standard of living. Under these conditions the workers found that increased efficiency and output by the members of their immediate group tended to mean not a corresponding increase of pay, but less wages for all, or more work for the same pay; and the only way they could see to prevent overspeeding and the lowering of the rates was to set a limit on what any individual was allowed to do, in short to limit individual and group output until the employer could be forced to guarantee increased wages for increased effort and output.

These are the facts which, I believe, cannot be controverted. No one recognizes this more clearly than Mr. Taylor himself, whose denunciation of the blindness and unfairness of the average employer on account of them has not been exceeded in strength and bitterness by the labor leaders, and who declared publicly that were he a worker up against such conditions he would feel as they have felt and do as they have done in the matter of limitation of output.

LABOR'S PURPOSES IN COLLECTIVE BARGAINING¹

It is proper to explain labor's purposes as an organized participant in industry. It is the contention of some that labor seeks only its own satisfaction and makes no contribution in return. This is wholly untrue.

Labor believes that the agreement between workers and employers, negotiated in conference, based upon experience and

¹ Samuel Gompers. Union Labor and the Enlightened Employer. *Industrial Management*. April 1, 1921. p. 236-7.

operating to secure justice, is the most important contract in all human relations today. It is reciprocal instead of one-sided. It gives the largest possible measure of justice to the workers and it gives a guarantee of stability and cooperation to industry. Only when there is an agreement, freely entered into by the workers, writing into definite terms their obligations and their rights, can there be the highest free contributions of human labor energy to industry. The agreement is the channel through which labor pours into industry its greatest effort, its most intelligent effort, its constructive thought. But more than that, it is the document through which complete revolution is wrought in the principle of conduct in industry. From the moment in which workers and employer negotiate and agree upon terms, hours, conditions and wages, the principle of autocratic domination gives way to the principle of democratic operation. That is the vital point in the whole question of labor relations and it is precisely that point that arbitrary and reactionary employers fear to pass. King John before them struggled over the same principle. King George the First struggled over the same principle. The late Czar and the ex-Kaiser did likewise. Every great force that has stood against this principle has, in the great hour of decision, been compelled to give way. . .

The reason employers in some instances put forth such violent opposition to organized labor is that it involves the change from autocratic control to democratic control. The basis of calculation is changed. And if employers were not in some instances shortsighted the change would be accepted unanimously and gladly as a benefit to industry and to mankind in general.

Only careful surveys by competent engineers could reveal the staggering losses to industry caused by arbitrary rule. There have been estimates of the colossal losses suffered each year by the steel trust because of its refusal to adopt enlightened employment policies, including negotiating with organized workers, but only a detailed examination and the most careful comparison could reveal anything approaching the real loss. Some employers cannot believe that the workers have motives unlike their own. Let those employers find out the production loss caused each year by autocratic control of industry. The nation pays the bill for this obstinacy in a definite loss of consumable commodities.

LABOR'S OBJECTIONS TO UNCOOPERATIVE
MANAGEMENT¹

Industry in America has not been carried on as effectively as it might have been, one prominent reason being the lack of confidence which has existed on the part of management toward labor and on the part of labor toward management. Management, at times, has apparently believed that satisfactory production depended wholly upon rules, methods and systems worked out and applied by management alone.

Labor has been made to feel, on more than one occasion, that its sole function was to obey orders, and frequently to obey them blindly, and, where this condition has existed, it has unquestionably created an attitude on the worker's part where they had but little interest in production and none of the spirit of cooperation which is so essential.

For a number of years previous to the war, able men, animated by most worthy motives, endeavored to devise methods and systems which, if applied to industry, would establish greater production. But these systems, regardless of their individual merits, largely failed to solve the problem. Under their operation labor, as a whole, became more dissatisfied and less willing to cooperate. Production was something that was forced, instead of something which came as a result of good-will and a spirit of confidence and cooperation.

The American trade-union movement believes in progress. It is the only hope for the future. It recognizes that progress means change and readjustment, and it has no objection to changes, but American labor may have serious objections to the method by which changes are made.

Labor has objected in the past and will object in the future, whenever it believes that it is being experimented upon and experimented with by others, without having a voice as to the necessity, the value, or the character of the experiments taking place during a period of change. Labor feels fully justified in this position, for, from the mass of industrial experiments in which the human factor plays a prominent part, we find that the majority have resulted in failure. It must be recognized

¹ John P. Frey. *Labor's Attitude Toward Methods of Management*. *Annals of the American Academy*. September, 1920. p. 140-5.

that there is a distinct difference between experiments with material and experiments with human beings.

If labor has realized that production was necessary to the creation of wealth, and wealth was necessary if higher wages and other improved terms of employment were to be secured, why is it that labor frequently indicated a frank unwillingness to cooperate with management when new methods or systems of production were applied?

One prominent reason for labor's position is not difficult to discover. Labor was suspicious of these systems; suspicious because it had not been consulted, and had had no part in preparing them; suspicious because they were, unfortunately, frequently advertised as methods by which skilled labor could be supplanted by unskilled labor; suspicious because it claimed that scientific methods had been worked out which enable management, and management solely, to determine what degree of exertion, what amount of production labor should produce within a given time; suspicious because in practice these systems are largely applied by men having little, if any, practical personal experience as manual or skilled workmen; suspicious because the mathematician and the mechanical engineer were held to be the only ones competent to determine the methods, processes and amount of energy which the workman should put into the day's work.

Facts are facts, and no good can come from sidestepping them, or glossing them over.

Labor, before the war, rose in opposition to the several systems of production which have been loosely called "scientific management." As labor was directly affected, it was interested in time studies, in the subdivision of labor and the basis of computation for the payment of wages. For a number of years there existed an active controversy between those who advocated so-called scientific management and the trade-unionists. As a result of an investigation made under the authority of the Industrial Relations Commission, it was made evident that the term "scientific management" applied to these systems, was an unfortunate one because none of them had reached that stage where the term "scientific" was appropriate.

The internal evidence, contained in the investigating commission's report, satisfactorily disposed of the contention that

time studies of labor could be made with scientific accuracy; they disclosed that the human element was a factor which could not be reduced to scientific accuracy by the use of the stop-watch, or any other methods, for men differ in their mentality, their vitality, their nervous reaction, the time required to recover from fatigue as well as in a number of other qualities.

Sometime after that report on scientific management and labor, above referred to, had been published, one of the production engineers in the scientific management group, in a communication to the writer, said in substance: "I will admit that you have proved the unscientific character of much that has been termed 'scientific management' and that no one can successfully claim today that time studies of labor can be made which are scientifically accurate. You have killed those claims and you may kill others, but the soul of efficiency cannot be killed. Certain fundamental truths which were worked out by efficiency engineers will live regardless of how encumbered they may have been by false claims, and by the pretensions of those who saw in the new conceptions of production an opportunity of exploitation for personal ends."

An unprejudiced examination of what has been done by the efficiency or production engineers bears out the basic truth contained in the statement that the soul of efficiency cannot be killed. Unquestionably, there was much in scientific management which was sound, for if labor could be charged with inefficiency at times, in many instances management in American industries could be charged with a much greater volume, as well as the burden of responsibility. In fact, those who have studied the methods or lack of methods of management which existed a number of years ago are frequently surprised that it was possible to have kept the sheriff from the door, under the cumbersome, inadequate and unintelligent system of production which existed in many plants.

LABOR ATTITUDES TOWARD SCIENTIFIC MANAGEMENT¹

An investigation of scientific management was made for the Federal Commission on Industrial Relations. This investigation

¹ Samuel Gompers. *American Federationist*. June and August, 1916.

was conducted by Professor Robert F. Hoxie of the University of Chicago, with the advice and assistance of Mr. John P. Frey, editor of the Moulder's Journal, and Mr. Robert G. Valentine, representing the employers' interests. The report, which was signed by all of these investigators, points out the following defects that were observed:

"(a) Failure to carry into effect with any degree of thoroughness the general elements involved in the system.

"(b) Failure to adopt the full system of 'functional foremanship.'

"(c) Lack of uniformity in the method of selecting and hiring help.

"(d) Failure to substantiate claims of scientific management with reference to the adaptation, instruction and training of workers.

"(e) Lack of scientific accuracy, uniformity and justice in time study and task-setting.

"(f) Failure to substantiate the claim of having established a scientific and equitable method of determining wage-rates.

"(g) Failure to protect the workers from over-exertion and exhaustion.

"(h) Failure to substantiate the claim that scientific management offers exceptional opportunities for advancement and promotion on a basis of individual merit.

"(i) With reference to the alleged methods and severity of discipline under scientific management the 'acrimonious criticism' from trade unions does not seem to be warranted.

"(j) Failure to substantiate the claim that workers are discharged only on just grounds and have an effective appeal to the highest managerial authority.

"(k) Lack of democracy under scientific management." . . .

The wage-earners know that a truly scientific plan for securing efficiency must be a comprehensive plan that involves all of the processes of production, one that does not expend itself on the application of labor power by the workers, but gives proportional consideration to an adjustment of the materials and the scheme of production over which the employer has control.

Real scientific efficiency in production must have regard for the human factors in production and must find a place in the scheme for principles of human welfare. Science places a high

value upon human life, and everywhere makes the human effect the paramount consideration.

Scientific management as found in most instances has to do only with time and motion studies, ostensibly to establish new standards and bases for wage compensations. However, time or motion studies so far made are all based upon averages and make no attempt scientifically to establish principles that could be termed just standards for compensation.

Time and motion studies fail to make any consideration for human fatigue. They are only methods for establishing the work that can be done under highest pressure in the shortest period of time without any pretense of conserving human creative power. The whole emphasis is put upon the quantity of material output. Merely mathematical maximum of production is not the desirable scientific output. . .

The American Federation of Labor has achieved a tremendous victory of far-reaching consequence in protecting workers in certain trades against a pernicious system that threatened the manhood, the independence and the initiative of the workers of those trades. Particularly the workers in the metal trades have felt the impending danger of efforts to fasten upon them systems of so-called "scientific management." These systems are endeavoring to establish a new standard for paying wages, a standard that would inevitably undermine the health and mentality of workers, for it is a standard that aims directly to speed up workers to the exhaust point and to instill mechanical habits of work.

In order to protect the lives and health of workers, Congress incorporated into the Sundry Civil bill and fortifications bill the following proviso:

"Provided, That no part of the appropriations made in this act shall be available for the salary or pay of any officer, manager, superintendent, foreman, or other person having charge of the work of any employee of the United States while making or causing to be made with a stop-watch, or other time-measuring device, a time study of any job of any such employee between the starting and completion thereof, or of the movements of any such employee while engaged upon such works; nor shall any part of the appropriations made in this Act be available to pay any premium or bonus or cash reward to any employee in addition to his regular wages, except for suggestions resulting

in improvements or economy in the operation of any government plant."

These bills were approved by both houses of Congress and have been signed by the President. The same proviso is included in the Naval and Army bills. Thus the workers have secured congressional approval for their opposition to systems that have sought to give to a new exploiting scheme the sanction of science and of efficient production.

Workers have proven by their actual experiences that stopwatch time-measuring systems are neither scientific nor are they in furtherance of most effective production. The workers are not opposed to methods or devices that facilitate production, but they are opposed to methods that dehumanize the workers.

The so-called scientific efficiency systems that have been thus far proposed are neither scientific nor efficient. The workers are in favor of methods that will enable them to become more effective, intelligent, resourceful participators in production. Such methods must necessarily be educational in nature.

The labor movement declares that efforts to promote production in quality as well as quantity must have as their primary consideration the development of the creative power of the human agents.



VIII THE BASIS OF EMPLOYEE REPRESENTATION

Just enough shop committees went into the scrap heap when the depression of 1920 and 1921 came, to give rise to the impression in some quarters that the shop committee movement had died an early death. A truer estimate of the situation would be that the depression weeded out shop committees in those plants where employers had entered into them lightly, hastily, or insincerely. The backbone of the shop committee movement held firm, and employee representation is a permanent policy of industrial psychology for a substantial number of large and small business concerns.

Employee representation rests upon a faith in the honesty and fairness of ordinary men. It assumes that the ordinary worker has a strong instinct of self-assertiveness and has a worth while mental contribution to make to management. Every step in employee representation requires the utmost honesty and frankness on the part of the management. The spirit of the management counts for more than any other single factor. Mutual confidence is indispensable. Employee representation means believing in men and getting them to believe in their managers. This mutual trust and confidence is usually a gradual growth, but its results are so wholesome and enduring for managers as well as for workers that it is worth all of the patience required. The center and core of the psychology of employee representation is the sincerity, candor, justice, open-mindedness and intelligence of the management.

DO WORKERS WANT KNOWLEDGE AND RESPONSIBILITY?¹

The multitude of causes making for the general dissatisfaction prevailing among workers which is called industrial unrest

¹ Royal Meeker. *Employees' Representation in Management of Industry*. Monthly Labor Review. Vol. 10. February, 1920.

may be compressed under three heads: (1) Dissatisfaction with their wages, hours, and earnings—a feeling on the part of the workers that they are not receiving a fair share of the product of industry; a widespread belief that workers are being exploited by owners, employers, and their managers. The rapid rise in prices has greatly strengthened this belief even among those workers who have secured wage increases in excess of increases in the cost of living. Many thousands of workmen who have profited greatly by the price upheavals of the war period firmly believe they are worse off than before the war, or, at least, that the employers have gained more than the workmen and hence the workmen are being done by the employers. (2) Dissatisfaction with the management of industry—a feeling that not only are the workers being exploited but that the “enterprisers” are not as enterprising and their managers not as capable as has been commonly supposed. Work is made needlessly monotonous and uninteresting and production is thereby curtailed. The workers feel that industries are being conducted from a distance by men who have little or no first-hand knowledge of conditions and who do not understand the workers’ point of view, knowledge, and capacity. These grievances are due, in large part, to big business organization which has brought about what may justly be called “absentee landlordism” in industry. (3) Dissatisfaction with the nature of their work—a feeling that industry is a treadmill for workers of all kinds, but especially for manual workers, and that the opportunities for successful and permanent escape into managerial, employing, and capitalistic positions are scarce and growing scarcer every day. . .

Lack of interest in work grows out of absentee ownership. The absent industrial landlords, interested only or principally in dividends, employed experts, scientific managers, to produce a substitute for the old-time workman’s interest in his work. The scientific managers have been attacked so violently and so frequently that I feel obliged to apologize for referring at this point to the most obvious and fundamental error contained in their original program. The scientific managers did not, in the beginning of the efficiency movement, differentiate between the workman and the machine or tool with which he worked. Men and machines were to be made to do each operation the “easiest” way; that is, with the least lost motion and expenditure of ef-

fort. The scientific managers have not yet grasped fully the difference between a man and a machine and the economy of making use of the heads of the workers as well as their arms and legs. A good deal is said about the worker's psychology, as though the worker were some strange, wild beast with a peculiar psychology all his own, quite different from the psychology of employers and managers. It is because the psychology of the worker is the same as the psychology of the employer and the manager that strikes and lockouts occur with such distressing frequency. . .

A man will willingly work much harder, expend much more energy, and be much less fatigued working on a job which he has a part in planning, and for the results of which he is responsible. The present-day movement for industrial democracy is a partial recognition of the fundamental psychological phenomenon that industrial fatigue is not simply an engineering question to be stated mathematically in foot-pounds per hour or even a physiological question having to do with calories burned up in the body. Work is hard primarily because it is uninteresting and monotonous, or easy because it demands ingenuity or skill. Paradoxical as it seems, the way to make work easier is to make it harder by requiring more of the workmen. The mental application required or the muscular effort put forth has little to do with the hardness of a job. In so far as scientific management has resulted in merely breaking processes up into their component parts, segregating so far as possible the purely muscular and mechanical operations from the creative and planning functions, so-called "efficiency" has resulted in the most disastrous inefficiency. The "easier" specific operations or fractions of operations have been made, the harder they have become. All the efforts of the scientific managers and efficiency experts to arouse, increase and maintain the interest of the workman in his work are bound to be fruitless unless the work itself is made interesting. The worker must be called upon to use his head in planning as well as his hands and feet in executing his work if contentment is to be attained in industry. . .

I insist that the management, even scientific management, has not a monopoly of all the brains in an establishment. The workers themselves can and do contribute much in the planning and doing of the work. What is of vastly more importance than the increase in production as a result of utilizing the latent in-

telligence, ingenuity and enthusiasm of the workers, is the increase in contentment. Here is a vast source of industrial power which has been cut off, isolated, by the transformation of little business into big business. It will be difficult to tap this source, but tap it we must if we are to continue anything resembling the present industrial organization with its large scale production. The good-will of the workers is a much more potent force making for industrial efficiency than all the scientific management formulas and systems of production. There is no inherent reason why the good-will of the workers should not go hand in hand with scientific management. Until now the workers have had only antagonism for scientific management because the scientific manager never asked them for their opinions or ideas—he only told them what they were expected to do and the workers promptly did something else. I have already said workers are not different from employers. This is precisely what ails them. If employers will deal fairly and squarely with their employees, let them know all about the business except only those technical processes which must be kept secret, and take them into a real partnership, production will be enormously improved both in quantity and quality. This may be just another way of saying that when the millennium comes there will be no industrial unrest, for there will be no industry, no employers and no employees. Before abandoning ourselves completely to pessimism and despair we should at least try the experiment of giving the workers a real voice and responsibility in management.

THE ECONOMIC EFFECTS OF TRUSTING WORKERS¹

In agreement with many critics of the present industrial situation, I believe that the most significant feature in labor conditions of the day is the expressed desire of labor to share in the management of business. This desire has taken on various forms in different parts of the world, the Bolshevism of Russia being merely the idea carried to an absolute extreme. The underlying significance of all these movements is the final reali-

¹ Cyrus McCormick, Jr. Address before the National Safety Council, on "Cooperation and Industrial Progress." Scientific American. February 7, 1920.

zation that the relations of employers and employees must, from now on, be formed on something besides a cash basis. The workman is as interested as ever in his wages and in his hours, but he is asking for more. Sometimes the demands are not well understood even by those putting them forward. What the workmen really want is self-expression. They are asking the right to discuss and share in the adjustment of matters affecting their own interests.

Many employers in this country, sensing this situation, are admitting the right of their employees to discuss, in joint conference, matters affecting the mutual interest of Capital and Labor. This, of course, has involved a recognition of the principle of collective bargaining. Economists of the older school tell us that collective bargaining is detrimental to the best interests of the employees and that any artificial interference with wages will result in an artificial attempt to regulate prices. They claim that values are regulated by economic laws. This, of course, is true to a certain extent, but on the other hand it can be argued that collective bargaining is an aid to humanity and that it allows other economic laws to operate which might otherwise be held in abeyance. Not many years ago the doctrine of "caveat emptor" ruled every economic transaction and the business world was permeated with the ethics of David Harum. Just as that doctrine has vanished, so now is vanishing the fear of collective bargaining, and we find ourselves not only admitting the right of workmen to participate in the determination of working conditions but also discussing how this right may be most surely exercised. The method finding most favor in this country can perhaps best be classified by simply calling it Employee Representation.

Reasons for Adoption of Employee Representation

Syndicalism has made such rapid strides in eastern Europe that some men, not recognizing the fundamental solidarity of the American people are afraid that this country is about to deliver itself to Bolshevism; therefore they are seeking to head off this unrestrained development and to provide a saner method by which the legitimate desires of the workmen for self-expression may be granted without at the same time completely ruining our present industrial fabric. Men of this opinion argue

that the laborer has a right to speak for himself, and wish to give him this right before he resorts to revolution to obtain by force what he may think is being withheld from him. They believe discussion in an open forum cannot but bring results and that through efficient cooperation Capital and Labor, working together, will avert any possible danger of anarchy.

There is close parallel existing between the movement in favor of employee representation and the growth of democratic government. Europe in the eighteenth century considered Frederick the Great's government to be nearly ideal. Later thinkers have called his government a benevolent despotism. Frederick was autocratic as any Czar and his form of government a despotism; but because he tried to do right and interpret, in the fairest sort of a way, the desires of his people, his despotism was benevolent. Now until recent years our industrial system was also a benevolent despotism. Large employers in this country and abroad instituted welfare work; started systems of insurance and compensation; made the conditions of their working people as pleasant and safe as possible; but everything that was done was paternally imposed from the top and did not come as a result of the expressed desire of the great body of employees. This system was benevolent, to be sure, but it was nevertheless despotic to a great extent. Just as benevolent despotism in politics has given way to a great democracy wherein the governed have every right of self-expression, so in industry we are now finding the old system being set aside. Now the employee is not only given the right, but is urged to accept it, to sit on an equal basis with his employer and decide every question which affects his interests. Industry is becoming democratic.

It is easy to point a finger of scorn at our present civilization and condemn it as being overly materialistic. Metaphysicians from Aristotle to the present day have argued against materialism. Phrasing their thoughts in the vernacular and adapting their theories to modern times, we may say that we must find some new cause for our existence besides the worship of the almighty dollar. The joy of doing things rightly will in the end give men a more real satisfaction than the material results of their efforts. Applying metaphysics to employee representation, we may describe it as a concrete effort to introduce moral right into industry. It will be many generations before mate-

rialism vanishes from our daily life, but surely employee representation is a step in the right direction. Idealism, after all, is something the world would do well to analyze as a necessity of today rather than of the Hereafter.

Looked at superficially, employee representation is expensive. It costs a certain amount of money to pay the added salaries, to do the clerical work involved, and the like; but those employers who have had the best experience say that it is really economical and efficient. They believe it pays; they believe the added interest a man must have in his work when he knows he has a share in the control of it, will go a great way toward bringing about the final efficiency of production which must be secured if the present pace of manufacturing is to be maintained. Scientific management has just one more step to take. It must become endowed with soul in order to become more efficient; and its savings must depend not upon force or will, but upon the consent of the governed. The war has proven that democratic society, while superficially less efficient than autocracy, is in the end far stronger in the face of the most awful competition human ingenuity can devise.

RESTORING PERSONAL CONTACT IN LARGE SCALE INDUSTRY¹

The personal relationship which existed in bygone days is essential to the development of this new spirit. It must be reestablished; if not in its original form, at least as nearly so as possible. In the early days of the development of industry, the employer and capital investor were frequently one. Daily contact was had between him and his employees, who were his friends and neighbors. Any questions which arose on either side were taken up at once and readily adjusted.

A feeling of genuine friendliness, mutual confidence and stimulating interest in the common enterprise was the result. How different is the situation today. Because of the proportions which modern industry has attained, employers and employees are too often strangers to each other. Personal contact, so vital to the success of any enterprise, is practically unknown, and

¹ John D. Rockefeller, Jr. Address before the Industrial Conference at Atlantic City, October 16, 1919. *Industrial Management*. p. 403-4. November, 1919.

naturally, misunderstanding, suspicion, distrust and too often hatred have developed, bringing in their train all the industrial ills which have become far too common. Where men are strangers and have no points of contact, this is the usual outcome. On the other hand, where men meet frequently about a table, rub elbows, exchange views and discuss matters of common interest, almost invariably it happens that the vast majority of their differences quickly disappear and friendly relations are established. Much of the strife and bitterness in industrial relations results from lack of ability or willingness on the part of both labor and capital to view their common problems each from the other's point of view.

A man who recently devoted some months to studying the industrial problem and who came in contact with thousands of workmen in various industries throughout the country has said that it was obvious to him from the outset that the working men were seeking for something, which at first he thought to be higher wages. As his touch with them extended, he came to the conclusion, however, that not higher wages but recognition as men was what they really sought. What joy can there be in life, what interest can a man take in his work, what enthusiasm can be expected to develop on behalf of his employer, when he is regarded as a number on a payroll, a cog in the wheel, a mere "hand." Who would not earnestly seek to gain recognition of his manhood and the right to be heard and treated as a human being and not as a machine?

While obviously under present conditions those who invest their capital in an industry, often numbered by the thousand, cannot have personal acquaintance with the thousands and tens of thousands of those who invest their labor, contact between these two parties in interest can and must be established, if not directly, then through their respective representatives. The resumption of such personal relations through frequent conference and current meetings, held for the consideration of matters of common interest such as terms of employment, and working and living conditions, is essential in order to restore a spirit of mutual confidence, good-will and cooperation. Personal relations can be revived under modern conditions only through the adequate representation of the employees. Representation is a principle which is fundamentally just and vital

to the successful conduct of industry. This is the principle upon which the democratic government of our country is founded. On the battlefields of France this nation poured out its blood freely in order that democracy might be maintained at home and that its beneficent institutions might become available in other lands as well. Surely it is not consistent for us as Americans to demand democracy in government and practice autocracy in industry.

What can this Conference do to further the establishment of democracy in industry and lay a sure and solid foundation for the permanent development of cooperation, good-will and industrial well-being? To undertake to agree on the details of plans and methods is apt to lead to endless controversy without constructive result. Can we not, however, unite in the adoption of the principle of representation, and the agreement to make every effort to secure the endorsement and acceptance of this principle by all chambers of commerce, industrial and commercial bodies and all organizations of labor? Such action I feel confident would be overwhelmingly backed by public opinion and cordially approved by the Federal Government. The assurance thus given of a closer relationship between the parties to industry would further justice, promote good-will and help to bridge the gulf between capital and labor.

It is not for this or any other body to undertake to determine for industry at large what form representation shall take. Once having adopted the principle of representation, it is obviously wise that the method to be employed should be left in each specific instance to be determined by the parties in interest. If there is to be peace and good-will between the several parties in industry, it will surely not be brought about by the enforcement upon unwilling groups of a method which in their judgment is not adapted to their peculiar needs. In this, as in all else, persuasion is an essential element in bringing about conviction. With the developments in industry what they are today there is sure to come a progressive evolution from autocratic single control, whether by capital, labor, or the state, to democratic cooperative control by all three. The whole movement is evolutionary. That which is fundamental is the idea of representation, and that idea must find expression in those forms which will serve it best, with conditions, forces, and times, what they are.

HONESTY IN COOPERATION¹

Another committee that marks a long step forward is the efficiency committee. The very word "efficiency" is anathema to the worker, because he associates it with grinding, wearing force that means more dollars for the owner and a broken constitution for him. True efficiency, of course, means nothing of the sort; it means the utilization of the waste time and motion, and is an addition to the power of the worker. Only through the workers' own government can the best efficiency results be obtained, and by enlisting their intelligent help the subject can be made of absorbing interest. . .

The efficiency committee will not only make smooth the path to better methods, but through suggestion systems and investigations of their own will often do more toward real economy of operation than it is possible for any professional engineer to do. In one plant the men have themselves re-designed nearly every machine in the place, with astounding results in the way of production, quality, and lowering of sales price, with an increase of wages to the men and profits to the company. In another factory, within six months from the time the workers were given a voice in the management, they devised more improved machinery than had been known in that particular industry within twenty years.

Shop committees are far better equipped to deal with union matters than are employers. We all like to dodge the fact that unions exist; we like to close our eyes to the fact that they are growing and that no manager can today say: "I refuse to recognize unions as such; I will deal only with men on the pay-roll." Unions are here and to stay, and they grow steadily more powerful. It is for the employers to take them as aids to progress or as antagonists.

Meeting them as antagonists, fights and more fights are bound to occur, and each fight leaves the corporation combatant weaker. But there can be no antagonism when the corporation representatives appointed to deal with union affairs are themselves union men, elected by the body of the workers to preserve their own best interests.

¹ William R. Basset. *When the Workmen Help You Manage*. p. 131-5. The Century Company. New York. 1919.

Take several specific cases. A strike was ordered in the garment trade in a Middle Western city, and every factory but one closed. In that one factory the committee (and all its members were union men) stated that it would not be right to penalize their fellows and employers for the sins of others, and they refused to strike—and also preserved their union standing. In an iron-working shop, the mass meeting called by the committee to consider the union demands for a closed shop voted against closure—and the chairman of that meeting was president of the local union.

Unions do not all want to fight. A few union business agents think that their own jobs depend upon the amount of trouble they can stir up, but, generally speaking, union workers do not differ from other workers unless they are smarting under a sense of injustice, and then, just like other people, they do want to get back at the boss. The union tenets of closed shop, limitation of output, regulation of hours, and the fixing of wages are all part of an economic defensive that need not be and is not maintained when the reasons for it vanish. And under autonomous works' control the reasons do vanish.



IX. INTEREST AND INCENTIVES IN INDUSTRY

The two notions are equally misleading that all work must ever be irksome and that all work is capable of being made pleasant. Psychology does not proclaim that drudgery can be abolished or that work can be made to take on the nature of a picnic or a sport. The proposal which psychology makes is a moderate and a reasonable one,—namely, that most work can be invested with a substantial amount of interest and pleasure. The irksomeness of work can be minimized and positive interest in the accomplishment of the task can be aroused, by the proper appeal to human instincts and incentives. Non-financial incentives are fully as important as financial incentives, and a permanent and spontaneous interest in work can come only by a satisfaction of both types of motives.

AROUSING INTEREST IN WORK ¹

Much has been written about the monotonous character of present-day industrial work; and much is now being written about the workmanly, manipulative, constructive, creative impulses which appear to be a native part of human equipment, and of which, it is claimed, little use is made or can be made in the average factory. Industry is under indictment on the serious count of failing to provide any reasonable outlet for certain fundamentally necessary and useful tendencies of the human organism. It is accused of cramping and stultifying the individual; of making it impossible for him to find interest and fulfilment of life in work.

Certainly no more serious situation could be conceived than one in which millions of people are destined to be confined for eight or nine hours of close application, to labors which are indifferently or even grudgingly performed. It is hardly an ex-

¹ Ordway Tead and Henry C. Metcalf. *Personnel Administration*. p. 199-205. McGraw Hill Book Company. New York. 1920.

aggeration to say that the permanence, productivity and humanity of any industrial system stands or falls in the last analysis upon its ability to utilize the positive and constructive impulses of all who work,—upon its ability to arouse and continue the interest of the workers. The problem, therefore, demands searching study if we are to answer such inevitable questions as: Is interest in work as now carried on possible? If it is possible, how is it to be aroused? If it is not, how can we so modify conditions that interest will arise?

The question of interest in work is an intensely practical one. The fact that much of the discussion of it has bordered on the sentimental need not disturb us if we will preface our study with a careful analysis of the concepts of "interest" and of "monotony."

People are interested when an activity tends to keep occupying the attention—that is, absorbing them by some appeal either of its difficulty, or downright enjoyment in its performance, of approbation of one's fellows because of proficiency, or of some other significance in the activity. People are interested when attention has passed the point of conscious effort and becomes eager, immediate and, so to say, spontaneous. Attention can be so commanded when we are *actively* engaged, have a definite *object* to attend to, and recognize *something at stake*, "something whose outcome is important for the individual."

A display of interest is therefore a display of "self-expressive activity." One is interested when one can register in the activity—in terms of self and group approval,—register in the doing and in the result. And that sense of self-satisfaction can grow only as the root desires of the individual are being realized. What those root desires are, we have already considered. We want to and we must register in terms of manipulation, workmanship, creation; in terms of group conformity and recognition, of emulation, and curiosity. Wherever, said William James, a process of life communicates an eagerness to him who lives it, there the life becomes genuinely significant.

Important elements in a condition of interest are therefore self-choice of the activity, pleasure in its continuance, a sense of significance and value in its performance, and opportunity to secure the approval of one's associates.

A condition of monotony exists where these elements are lacking. Remove the chance for self-choice of the action, for

understanding its significance, for having the approval of one's fellows, and the labor is sheer drudgery. "Monotony means that growth, development, have ceased." Monotony is present when work has become so habitual as to be automatic, (that is, it is making no demands upon the active attention); or when work is found to be temperamentally uncongenial, or is thus for any reason precluding the chance for self-expression and development through the work.

If these definitions are correct, interest and monotony are not characteristics of certain kinds of work. They are characteristics of people in their reaction to work. A job is not inherently interesting, not inherently monotonous. It is interesting or monotonous *to a worker*. There are inevitably these two aspects contributing to create the one fact of the worker-in-his-relation-to-his-work. The two must in each separate case fit; the worker must find the job that satisfies him. He must be able to register there; and in order that this may happen it must fit from the point of view of the opportunity *for him*, in relation to his capacity, and in relation to his motives and desires. It is, in short, a dynamic and changing fact. The worker is either progressively more interested because the adjustment is always improving; or he is progressively less interested—and usually less capable of being interested in the work.

Jobs as jobs, therefore, are neither interesting nor the opposite. It all depends on the relationship between individual jobs and individual workers. But there are, of course, jobs which because of their simple content do quickly become habitual and then automatic. Any prolonged performance of such operations will, of course, become monotonous and whether or not these jobs as now constituted can of themselves be interesting is in our opinion a grave question. The possibility of developing a derived interest for this type of work must be considered.

But there are many jobs usually thought of as monotonous, which require thought, care and attention, and could therefore be much more interesting than they are, if only the worker had the knowledge, ability, aptitude and background, out of which interest would normally arise.

This points to a fundamental need—the need for analysis of the *intellectual content of jobs*. From the point of wise selection of workers, promotion, transfer, modifications in process

and training, we need more exact data as to what qualities, aptitudes, traits of temperament and technical knowledge each job demands. Such study, we can confidently predict from all the job analysis which has thus far been done, will reveal an astonishing amount of special skill required at many supposedly monotonous tasks.

Such study will, moreover, tell us how many jobs of each different kind there are in a factory. We know that it is inaccurate to speak of all factory work as repetitive drudgery. The work of machine maintenance occupies some workers. The handling of materials and trucking occupies others. There is assembling, inspection, packing, shipping. The actual proportion of unskilled machine-feeders varies from plant to plant; but apparently it runs between forty per cent and eighty per cent. We must not ignore the fact, however, that the elements of insecurity in the job, non-control over work, little significance in the work, little chance for fellow workers' approval, may all be present at repetitive and non-repetitive jobs alike, and that monotony exists wherever the chance to make the job one with one's self is no longer present.

The Worker's Attitude Toward Interest.—Our discussion of methods of arousing interest in work will be clearer if we consider next two important objections to any definite effort in this direction. It is said, first, that workers seem to like automatic jobs; second, that they don't want to be interested in their work. Both points have such elements of truth in them that they deserve careful scrutiny.

There are at least two important reasons why some workers seem to like automatic jobs. The job must, of course, always be seen in relation to the individual's capacities and to his desires. The capacity and desire of a given worker is determined by many factors. But second to none in significance are the factors which moulded his life and outlook from birth to his fifth or sixth year. A childhood spent in the restrictions of a tenement environment with its precocious developments in some directions, its enforced repressions in others, its complete effacement of certain qualities and values, may well create a mental life which is incapable of securing the normal responses. "Repression," it has been thoughtfully said, "often expresses itself very strikingly in the decrease of such emotions as have been present and the non-appearance of expected new emotions."

The repression may be an infantile one; it may be due to long years of dull, unpromising work. But the fact remains that individuals are responding to stimuli in a pathological way when they are content with automatic jobs.

Again, this repression may be invited and continued because of the habits and attitude of the surrounding group. John Stuart Mill gives an accurate characterization of much working class behavior when he says:

"Even in what people do for pleasure, conformity is the first thing thought of; they live in crowds . . . until by dint of not following their own nature, they have no nature to follow; they become incapable of strong wishes or native pleasures, and are generally without either opinions or feelings of home growth, or properly their own."

In other words, lack of interest breeds lack of interest, until a situation arises wherein it may actually be bad form to like one's job.

There remains the second objection that workers do not want to be interested in their work. Where this is the case, it is often true that habituation to drudgery has led to a more or less unconscious conclusion that work cannot be interesting. Many older, habituated routiners undoubtedly hold this conviction; the hope is with the younger, less fixated groups.

It is indeed hard to visualize the outlook and environment as it may present itself to the worker.

"It is," says an observing economist, "not sufficiently considered how little there is in most men's ordinary life to give any largeness either to their conceptions or to their sentiments. Their work is routine; not a labor of love, but of self-interest in the most elementary form, the satisfaction of daily wants; neither the thing done, nor the process of doing it, introduces the mind to thoughts or feelings extending beyond the individual; if instructive books were within their reach, there is no stimulus to read them; and, in most cases, the individual has no access to any person of cultivation much superior to his own. Giving him something to do for the public supplies, in a measure, all these deficiencies. If circumstances allow the amount of public duty assigned to him to be considerable, he becomes an educated man."

There is finally, the fear of exploitation if interest in work is pushed to a point where the employer gets a much larger

proportionate return for increased product than the worker. There is reason for this fear; and no manager who wants to introduce a thorough-going program to secure interest can neglect to recognize the place of rewards in the scheme of incentives. To stress, as some have, the phrase "non-financial" incentives, is almost to prejudice in advance the case for greater interest.

To be sure the sole and primary incentive to interest and effort is not the pay envelope. The most deep rooted incentives are non-financial. But that does not argue for any ignoring of the financial considerations or of the necessity for doing justice in the matter of income distribution. The arousing of interest is not synonymous with efforts to "speed up" production, to cut wage rates, to increase profits. At that moment when workers feel they are being tricked into interest in work in order that their employer may get added returns, the game will be up with the employer. *Hand in hand with the development of methods of stimulating interest in work, must go methods of decentralizing control over process and over earnings.* How this may be done we are considering in other chapters. The immediate point is that the creation of interest in work is not a Machiavellian enterprise in which something can be given with one hand and taken with the other.

In short, the efforts of the employment administrator to make work interesting are, if they are intelligently pursued, neither disruptive of morale nor exploitive in character. In stimulating interest we are endeavoring to hasten an educational process which shall simultaneously arouse discontent with a meager, narrow life and provide channels for securing the permanent satisfactions of a life of wider outlook and constant growth.

Because this is an educational process, it is not calculated to disrupt the whole scheme of workers' habits and outlook so that they are without stability. Nor is it necessarily calculated to stir up longings which cannot be satisfied, nor to let loose impulses and desires which are anti-social in their manifestations and consequences.

To create interest in work means rather to make work contribute to the upbuilding of personality; it is to attempt to restore a greater unity to life, and remove the present wide gulf between work and pleasure, between the getting of a livelihood and the living of a life. To create interest in work

is thus a fundamental part of the educational function of the factory. And there are practical methods under which this education can be undertaken.

These methods are discussed in the remainder of the chapter, not on the assumption that any one plant can or should necessarily adopt them all; but because together they offer a program of action in a campaign of securing interest, which is comprehensive and worth working on over a period of years. It is not a problem which can be solved by cure-alls; a balanced plan is essential.

INTEREST AROUSED BY INFORMATION ¹

Interest in a thing may be developed by means of extending information about it. Men who sell are undoubtedly dimly aware of this principle, for they are introducing into their selling campaigns with increasing frequency informational disquisitions about their goods. They describe the source of the raw materials, processes of manufacture, ingenious methods of using the finished product, historical facts about the firm or its founders. These devices represent more or less conscious applications of our principle, and have grown apace with the increasing effectiveness of selling methods.

Leaving the unlimited possibilities of applying the doctrine of interest to marketing methods let us pass on to other economic implications. One of the most perplexing problems now before the public is the relation between the worker and his job. Business executives ask, "how can we interest our men in their work so that they will work effectively and contentedly?" This is only one statement of a host of difficulties relating to the industrial morale. It is practically and theoretically recognized that in order to secure the best possible results from a man we must interest him in what he is doing. James, with his penchant for expressing such ideas in racy terms, likens the situation to the lowly crap game. "The performances of a 'high' brain are like dice thrown forever upon a table. Unless they be loaded what chance is there that the highest number will turn up oftener than the lowest?" In other words, if we

¹ H. D. Kitson. *Journal of Political Economy*. Vol. 28. p. 334-6. April, 1920.

wish to secure a high grade of work from our employees we must load them with interest in the firm and the product.

Perhaps, it is pertinent to the point to inquire, can the average employee become interested in a thing for which he has no spontaneous liking? Many business executives sigh a hopeless negative. The psychologist answers affirmatively. James goes so far as to assert:

"Any object not interesting itself may become interesting. . . . An adult man's interests are almost every one of them intensely artificial; they have been slowly built up. The objects of professional interest are most of them in their original nature repulsive; but by their connection with such natively exciting objects as one's personal fortune, one's social responsibilities and especially by the force of inveterate habit, they grow to be the only things for which in middle life a man profoundly cares."

So the business executive may take heart. This fluffy-pated salesgirl at the basement glove counter may, if properly aroused, become as thoroughly interested in the manufacture and sale of gloves as she is in the latest modes of hairdressing. That lackadaisical ledger clerk buried in the sporting page when he should be posting remittances may be transformed so that he will be equally interested in increasing the collections of the firm. The course for the employer to pursue is to start a campaign toward the development of interest on the part of the force. This may seem contrary to the doctrine of responsibility as usually stated. The employer insists that it is the duty of the employee to develop his own interest voluntarily. But this is not a fair demand. It is incumbent upon the employer to offer stimulants to this interest. As business executives become aware of the magnificent human material just awaiting a galvanizing touch, they will begin to select certain bright young people and definitely woo their interests.

How to proceed is the practical problem. Let us consult our psychological prescription again. "Interest in a thing may be developed by extending information about it." In applying this in industry one would tell the employees many things about the business, soaking them in facts to the point of saturation. For example, in a textile mill, every employee should be told the facts about the invention of the cotton gin, the life of Eli Whitney, the different stages in the invention of textile machinery, and the struggles of the early inventors.

To inculcate a deep affection and loyalty toward the firm, give information about its beginnings and growth. One firm has prepared a history of the house including biographical sketches of the founders and of the employees of long standing. This first appeared in consecutive issues of the house organ circulating among the employees, and was so effective that it was made into a booklet for presentation to each employee, on his first day of employment. Another firm made its history impressive by presenting it dramatically at one of the regular "Get-togethers" of the personnel.

THE FAILURE OF MONEY INCENTIVES ALONE ¹

How can men be made to love their work? With conditions as complex as they are the situation cannot be wholly relieved. Men cannot be left free to do as they choose in a society such as ours. Yet when the truth is understood many improvements can be made. When employers know that attractiveness of work is more important than pay they will take pains to make the work attractive. *Money is not as strong an incentive as it is usually supposed to be.* When that is all a man gets from his work of course he will take any means possible to get all he can. When he works from other motives he will become less vividly conscious of the amount of pay he receives.

The only remedy that will lastingly overcome this social unrest is to make work interesting for all classes from the laborer to the professional man. We must forever get rid of the notion that anything interesting is for that reason either useless or conducive to inefficiency. The old theory of education used to be that the duller, uninteresting subjects were better for the student than the interesting ones because of the disciplinary value of making the student do what he disliked. The modern method, which has proven a better one, is to present the dead subjects in an interesting way. Psychology has shown that the way to do a thing quickly and well is to become intensely interested in it. Why not make work interesting? It can be done and the employer will eventually save by doing it.

¹ John J. B. Morgan. *Why Men Strike*. American Journal of Sociology. p. 207-11. September, 1920.

If work is to be made interesting the recent stress upon efficiency with its consequent overspecialization will have to be curtailed. To be constantly stressing the quantity and quality of work done is to furnish a superficial external drive. The extra pay that the man gets will at first look large but it will appear less and less, especially when the scheme becomes more widely used and all men get more pay. The incentive will fail and the workmen rebel.

Enough variation must be left in each man's job to kill the monotony.

Each man should be taught about his job in relation to the others so that he will feel that he is a vital part of the organization.

Each man should clearly see a possible route for promotion. If a man is hired as a stoker with a beginning salary of so much with the promises of periodical raises until a certain point is reached, all incentive for good work is killed in that man. He must be able to see where he could go beyond the stage of being a stoker. It does not matter if the man has but one chance in a thousand of making a certain step, let him know he has that chance and he will inevitably try to be the one.

When we were training our great national army each man was continually told that his job was important in the winning of the war; he was taught to love his job, the distasteful job of drilling. Besides he was filled with an ambition to do his best because he was shown the proper steps to gain promotion and saw others being prompted through tests of merit. After the signing of the armistice no one felt that he was vitally necessary and to cap this the War Department stopped all promotions. The spirit of the soldiers dropped like lead and it was almost impossible to get anything done. "What is the use since the war is over and I have no chance of any promotion?" was the cry.

All promotions should be based on merit alone and in such a way that every employee is convinced that it is merit alone that counts. Tell him what qualities are used in judging whether a man is to be promoted or not. Frankness on this one subject will work wonders.

Not only should the men be given a square deal, but pains should be taken that he knows that he is being fairly treated, not by blatant advertising but by open straightforward organi-

zation. An employer may shower gifts upon his men in the way of recreation rooms, extra holidays, bonuses, etc., but if he is not manifestly fair the men will spurn his gifts and believe that he is trying to appease them for having robbed them.

When the workman was an artisan he was interested in the efficiency of the process in which he was engaged and took pride in the handling of his tools. Today the machine is the artisan and the workman the tool, and no intelligent man can take an interest in being an efficient tool. *The present industrial unrest will not cease until the workman is studied as a human organism with the purpose in mind of giving him some interest in his work besides the pay he receives.*

RESTORING PLEASURE IN PRODUCTION¹

The biggest problem of personnel relations in industry is the restoration of the elements of pleasure in production. The really far-sighted managers of industry are realizing that such restoration will do more to improve quality and increase quantity in production than any other single thing. They are also seeing that the attempt to suppress the instinct of craftsmanship and to steal away its advantages from the mass of the workers for the benefit of a few is the most wasteful and destructive blow ever struck at social well-being. . .

Unless industry can be so transformed as to gratify these instincts, then industry and the civilization built upon it will break down and disappear.

Methods of Arousing Interest

Because scientific personnel relations are bringing about such a transformation, they offer the greatest possibility of meeting this problem. They propose an adjustment of the worker according to interests and abilities in the midst of helpful surroundings. They establish institutions to give full outlet for, and gratification of, his desire for planning and direction. They offer an opportunity for him to grow with his work and to share in its prosperity. This is the only basis for good-will between the employee and the industrial process.

¹ A. M. Simons. *Personal Relations in Industry*. p. 118-28. The Ronald Press Company. New York. 1921.

Educational Work

The first step to this end is comparatively simple and somewhat superficial. The worker must be given a full understanding, not only of the great industrial processes of which he is a part, but of the ends toward which that industry is tending and of his share in determining that development. Through such familiar methods as lectures, moving pictures, shop organs, trade journals, technical books and periodicals, and especially by proper education both in the schools and the shops, the theoretical foundation of craftsmanship may be laid. This educational work should give the laborer a knowledge of industry as a whole. He must be familiar with its history and the mechanical and personal changes that it has undergone. Upon this fascinating story the labor movements of the world rest for their arguments. Labor journals and all the literature of the working-class movement are filled with industrial history.

General industrial history should be related to the history of the special industry in which the worker is engaged and integrated with that of the particular firm where he is working. He accordingly sees his direct relation to great world processes. The history of the firm is one in which the worker is going to write a part, and he wishes to know what others have done and in what direction the whole, of which he is a part, is moving. Such a history should explain the firm policies. If these have not been formulated in shape for statement, the discovery of that fact uncovers a defect in management which should be changed.

Bring out the source of materials and the destination of the product. Tell the story of costs, sales, methods of marketing, and mechanical transformations. Changes in trade practice and possibilities of improvements finally unite each job to the entire process, if a thorough job analysis has made the information available. If time and motion studies have been made, here is a chance to show the latest standards attained in certain typical jobs and to secure the cooperation of the worker in raising these standards, which he will then see as stages in a long process. He will feel himself as an important link in that process, and

will wish his contribution to be worthy of all the others who have worked and will work with him in an endless historical line.

Selling the House Policies

This method of arousing interest is the one which modern advertising has found most valuable also in interesting consumers. All good advertising writers now insist upon the necessity of thorough familiarity with all the broader relations of the firm, its history, policies, and methods of work, as a preliminary to presenting its product to the public. The salesman is drilled in these things, and they are the foundation of selling slogans.

Fred H. Colvin, assistant editor of the *American Machinist*, has noted that:

Every progressive concern goes to considerable expense and uses great care to arouse enthusiasm in salesmen regarding the merits of their product. Every salesman can do better work with a firm conviction that the product he sells has many points of superiority over rival products. Yet few firms pay any attention as to whether the men and women who make the product even know what it is for. Is it not reasonable to suppose that if the workers can be enthused over the product, perhaps by the same or by entirely different methods than are used for the salesmen, that they will try to make it even better, or at least to maintain its quality?

Subsequent Value of Explanatory Work

Such an educational explanation should, of course, precede the installation of any new method of planning or routing work, or any change in shop organization. Without this introduction such plans will find hard running in the factory. But if they have been preceded by thorough instruction concerning the chain of processes in the plant and the interdependence of the various departments upon one another, the road will be much smoother.

This method offers an opportunity for the use of executives as teachers and lecturers, and for the development of talent for such work within the force. A live advertising department can help in teaching the technique of presenting facts. This, in turn, will also help the advertising department. Dull commonplace

presentations of fact to employees are no more effectual in arousing interest than are similar methods in reaching and holding customers. Yet firms that will spend hundreds of thousands of dollars to catch the attention and hold the good-will of constantly changing customers, will begrudge a few cents spent to secure the interest and good-will of the men and women whose life work is bound up in the plant and who have it in their power to make or break the firm.

Integrating the Worker with Industry

Nevertheless this explanatory and educational work, no matter how well done, will be largely futile if it is left to stand alone. It must be looked upon as merely introductory, requiring a follow-up like the advertising designed to bring inquiries. It is all preparatory to the real work of actually integrating the worker with the industry, of putting substance into the selling talk. To stop after telling the employee the story of the process of which he is a part, only to preach to him about his solidarity with the industry, is but to tantalize and aggravate his instinctive desire to share in that process.

This is a fact which every organizer of revolt among the workers understands full well, and is the reason why he always emphasizes industrial history. One fundamental problem of the labor movement which cannot be disregarded, is that of the restoration to the mass of workers of that common sharing in the destiny and direction of the industry which is the foundation of craftsmanship.

Restoring Power to Gratify Instincts

The problem of good-will in industry is the problem of restoring to the productive process the power to gratify the instincts of gregarious craftsmanship and adventure. The real leaders in industrial management are everywhere realizing that industrial progress depends upon the elimination from industry of the elements that are destructive to these instincts.

One of the most easily discernible of these elements is that of monotony.

The problem of monotonous work, as we have already seen, like nearly all problems concerned with so complex a thing as industry, is not one permitting a single solution. Proper selection helps to assign it to those to whom the monotony is less of a burden. Proper job analysis will often find a way to supplant

it with machinery. Adequate training systems may make of other such positions stepping-stones to less monotonous work. When nothing else offers, such work may be distributed and mixed with more interesting work.

Any work grows monotonous if it offers no opportunity for planning, no view beyond the day's task, no relation to bigger and less monotonous facts. All work becomes alive and vital when it engages the worker's initiative and offers a field for growth in both the task and the worker.

Disappearance of Initiative Among Workmen

At one time the American worker, more than almost any other contemporary laborer, was intensely interested in his work and in methods of improving it. This was the time when American workingmen were granted more patents per capita than any national body of workers before or since. That the number of patents taken out by wage-earners has greatly declined is due in part to the greater complexity of modern industry. Many inventions are now made through the work of highly skilled specialists in research laboratories. But the multiplicity and omnipresence of machinery should result in a far larger number of small but valuable improvements. These are not appearing. The worker does not understand the principles back of the machine he uses. He does not comprehend its full purpose. Most important of all, he lacks the interest in improvements that would not let the mind of the worker of a former day rest until he had seen the improvement his mind had conceived take form under his hand.

Managers have noticed this disappearance of initiative and have sought to arouse it by such methods as suggestion boxes, bonuses, and prizes. These have their value and their place, but they are in the nature of stimulants and poultices applied to an organic disease. As Helen Marot has pointed out, "The doing of tasks in factories for the sake of rewards, gives the workers experience in winning rewards. As they are interested only in the reward, they carry away no desire or interest in the work experience."

A Deficiency of the Taylor System

The worker's interest, if it is to run throughout the process, must be enlisted in the beginning. He must share in the planning of each step in the work. This sounds impossible to the

old-fashioned manager. It is coming to be seen as the easiest and most profitable manner of managing industry. Scientific management—the Taylor system—began by taking from the worker all share in the planning. The system was based upon the idea of collecting from the whole body of workers all the trade knowledge they possessed and assembling this knowledge in a planning department. This department was to be conducted by experts, who were to issue specific detailed orders as to the methods of work, which orders were to be obeyed without knowledge or question. Frederick W. Taylor has himself set forth this principle as follows:

The first of these four great duties which are undertaken by the management is to deliberately gather in all of the rule-of-thumb knowledge which is possessed by all the twenty different kinds of tradesmen who are at work in the establishment—knowledge which has never been recorded, which is in the heads, hands, bodies, in the knack, skill, dexterity which these men possess—to gather that knowledge, classify it and tabulate it, and in most cases reduce it to laws and rules; in many cases work out mathematical formulae which, when applied with the cooperation of the management to the work of the men, will lead to an enormous increase of the output of the workmen. . .

The fourth principle is the deliberate division of the work which was formerly done by the workmen into two sections, one of which is handed over to the management. An immense mass of new duties is thrown on the management which formerly belonged to the workmen.

The attempt to put all the "heads" together in the planning department, leaving nothing but "hands" in the shop, led to a righteous revolt of labor, and upon this rock scientific management was almost wrecked. There is a common impression, carefully fostered by some of the superficial efficiency engineers who have cast so much discredit upon a helpful and earnest profession, that labor opposed the Taylor system only because it increased production. On the contrary, the indictment against it almost invariably rests upon the attempt to deprive the worker of all pleasure in his work—upon its deadliness to the instinct of craftsmanship—an instinct as valuable to the management as to the men, and most of all to society as a whole.

THE ORGANIZATION OF NON-FINANCIAL INCENTIVES¹

The basis of all "non-financial incentives" is interest in work. Interest in work implies a desire to produce actuated by internal motives rather than external discipline.

Production means creation and the industrial creative function in man is a mental process and lies in his intelligent adaptation of means to ends. It is useless, therefore, to look for real creative work unless the workman has a chance to think and to plan. Any other working environment either fails to attract or actually repels the workman, and as a consequence offers no incentive to increased effort.

Work which does not call for thoughtful reflection, and which uses only muscular effort, tends to draw man down to the level of the brute and makes for industrial irresponsibility and consequent social disorganization. The unthinking man cannot be a responsible man.

It is the self-conscious faculty of man which distinguishes him from the animal and makes him above all a creative center through which the universal life giving power can deal with a particular situation in time and space.

To use a homely illustration with which every one is familiar—the traffic crowded street crossing cannot be regulated from the City Hall; it requires an individual (the traffic policeman) in the congested spot to deal with each particular situation as it arises, and upon his powers of observation and selection depends the orderly flow of traffic.

It is only through the individual life that the universal life can act and therefore the universal is compelled to evolve many individuals' lives if organization and order is to replace the unorganized state represented by the purely generic operation of natural law.

The problem of social organization is, then, how to organize society upon the basis of respect for the individual. This is also the industrial problem as well, for industry in the broadest sense is society in its highest form of activity because it is essentially constructive and therefore creative activity.

¹ R. B. Wolf. Non-Financial Incentives. Address before the American Society of Mechanical Engineers. December, 1918.

It was an inevitable corollary to the universal plan of creation that the individual life came into being not to create material substance as that had to be before individual life could gain consciousness. The function of the individual life, however, is to create by a thought process conditions especially selected to produce results which nature unaided would fail to produce.

This is what the horticulturist does. His power lies in his knowledge of natural law and his creations are made possible because he conforms to the law. The uncultivated orchard reverts to its original wild state when no longer attended by man but increases in productiveness by continued thoughtful application of man's power of selection and adaptation.

It is by a similar process of conscious selection that such devices as the steamboat, steam engine, electric generator and the telephone came into existence. They did not come into being and never would have been created by the generic operation of nature's laws.

* * *

In this connection it is well to observe that all of our creations, if they are to be successful, depend upon the strict observance of the laws of nature. When we clearly see man's place in the universal life movement we can understand why it was that in the lone process of evolution it was inevitable that a being capable of measuring by reflection be evolved. The very word "man" is derived from an Arian root meaning to measure.

All this may seem at first sight far removed from the problem of "non-financial incentives," but it seems to me it is necessary before proceeding further to gain some conception of the reason for man's existence. The concrete illustrations of the operations of non-financial incentives will then have greater meaning. . .

This creation of artificial conditions, which, taken all together, we call civilization, is, of course, the product of man's organizing power. While self-consciousness, the power of realizing the self as apart from the rest of the universe, has been a human faculty for untold ages before the present highly organized state of society had been attained, it is nevertheless true that now, for the first time in the history of the white race, we are confronted with the problem of correcting the repressive or selfish character of civilization so that it will serve the mass

of humanity. If we fail to accomplish this it will be destroyed by the same creative power which brought it into existence.

We must learn how to change the industrial environment from one which repels mankind to one which attracts. In other words, the incentive to work must be inherent in the nature of the work itself.

Now what are the conditions which we must meet in the industrial world to make work attractive? We have ample evidence that increasing financial returns have failed to stimulate productivity and, on the other hand, the constant demand for shorter hours and the increasing labor turnover is proof that work in most of our industries not only does not attract but actually repels the workman. We must, therefore, look into the working conditions themselves for the answer. This is the only scientific method of procedure.

I would like to quote from a letter which was received from a very intelligent labor leader recently, to show how the mass of employees look at the problem and how urgent is the need for its immediate solution if we are not to have a greatly reduced production of the necessities of life brought about by the concerted action of the workers. . .

You say that: Men can be productive only when they take an interest in their work and they will not take this interest unless those entrusted with the direction of their efforts realize that they must teach them constantly how to exercise their creative powers.

While I agree with everything you say relative to creative work and have thought along these lines considerably myself, still, is it possible in industries, as they are constituted at present, to enable the average workingman to do creative work? Isn't it true that industry is becoming so specialized that the workman is no longer a creator? I realize that while it may still be possible for the workman doing certain jobs in the mill to do creative work, to a certain extent, still isn't the tendency of modern industry more and more toward making the workman simply an appendage of the machine?" . . .

I was able to convince the writer of the letter from which I have quoted that creative work could be done to a great extent in modern industry, and further, that this could be accomplished, without any radical changes in equipment, greatly to the advantage of both employer and employee.

To do this, individual progress records are necessary so that the workman can know from day to day how he is improving in the mastery of the process.

The first example is from that branch of the wood-pulp industry known as the sulphite process and shows a cooking chart which was designed to give the cook information about the reactions in the digesters in which the wood chips are cooked in a six per cent solution of sulphurous acid partly combined with a lime base.

The skill in cooking consists in the proper control of the relief valve.

Before the introduction of these cooking charts, all this was left to the unaided judgment of the cook with usually nothing to help him but a small hand thermometer and a pressure gauge. Of course, great variation in the pulp was the result. The cooking charts, plotted by the cooks themselves, however, helped greatly as they enabled the quick visualization of the work.

Immediately after the introduction of these charts a very marked increase in the uniformity of the pulp was noticed, and the cooks, while at first opposed to the new method of "cooking with a lead pencil" as they called it, soon learned to like their work much better for the reason that they now had some way of visualizing the work in its entirety. In addition to more uniform quality of the pulp, the yield from a cord of wood increased something over five per cent.

We soon found that it was necessary to give some sort of continuous-progress record if we were to keep up the interest in the work, because no man could carry in his mind anything but a general impression of his progress from day to day. Progress records measure the man's increasing mastery of his work, and we feel that it is one of the moral obligations of the management to keep such records for the individual workman. Without these records men will not think of improvements in the process and they cannot be blamed for becoming indifferent. How long, for instance, would a superintendent or manager retain his interest in the economical operation of his plant if his cost sheets were withheld? We, as executives, must have quantity, quality and economy records, otherwise our interest soon lags. Why, then, should we expect the workman to be interested when he is not furnished with a record which at least reflects one of these elements? . . .

We keep a continuous-progress record of the work which is mainly one of quality. Most of our records refer to the quality of the work performed; in other words, the nearness to which the workman approaches the ideal standards which he has helped to form. The democratic cooperative forming of these standards by the joint work of the trained technician and the practical workman is absolutely essential, otherwise continuous progress will not be made. The whole plan must be really educational in nature and to be so the records must record the natural laws of the process and the individual's degree of control of forces in the material elements that he is using. The more factors that can be recorded, the greater the interest in the work. The reason for this is obvious. . .

It is obviously a difficult matter when dealing with maintenance and construction work to give quality or quantity records as the work varies so much from day to day, so the only kind of records we could give the men were records of cost. The original suggestion to give these records grew out of the fact that we give to each operating department head a complete cost of operating his department for which he was held responsible.

As soon as he began to realize this responsibility, because all the repair materials were charged to him, he at once began to make intelligent criticism of the engineering department, and especially was he critical of the maintenance foreman as he was wasteful in the use of materials. As a result of this, the maintenance foremen asked the master mechanic if they could not have job costs showing how economically they were doing their work as they had no idea of the value of materials that they were using. . .

In none of this work did we pay bonuses to a superintendent, department head or workman; our salaries and wages were high, but payments were all on a monthly, weekly, or hourly basis. The increased effort, therefore, came entirely from a desire within the individual to be productive. This sort of creative effort produced great changes in operating conditions; we increased our yearly production from forty-two thousand tons to one hundred eleven thousand tons without adding to the number of digesters for cooking the pulp, or wet machines for handling the finished product and we changed our quality from the poorest to the very best.

Due to the intelligent suggestion which came from our men all over the plant we were able to make very radical changes in the manufacturing processes. Entirely new methods of preparing our wood, making acid, bleaching, etc., were created, all of which we paid for out of the earnings.

I maintain that this was all the result of the freedom our men were experiencing because they were working in an environment which stimulated thinking. They had ample opportunity constantly to increase their knowledge of the underlying natural laws of the process, and were, therefore, able to realize the joy which comes from a conscious mastery of their part of the process.

This freedom to express one's individuality in constructive work according to law, is the only real freedom, for freedom unrestrained by a consciousness of the universality of natural law leads to anarchy.

We should never lose sight of the fact that the degree of conscious self-expression which the workman can attain is in direct proportion to the ability of the organization to measure, for his benefit, the impress of his personality upon it. The most democratic industrial plant, therefore, is the one which permits the fullest possible amount of individual freedom to each member, irrespective of his position and at the same time is so sensitively adjusted that it reflects immediately the effects of his actions. If his actions result in injury to others he will see that as a part of the whole he, himself, must also suffer.

Man is not an animal, but a free self-determining mental center of consciousness whose reason for existence is that the universal life can deal with a particular situation in time and space, and, by this means, be enabled to evolve a material universe organized to express the one great individual life of which we are all a part.

In conclusion let me say that I am well aware that to some of you this may seem like pure philosophical speculation far removed from the practical affairs of every day life. I have said nothing, however, that I cannot back up by any number of additional illustrations and my hope is that the examples given will stimulate others to make similar investigations, so that we can fulfil our mission in this country by evolving an industrial philosophy which will have for its ultimate aim the continuous unfoldment of the latent powers in man.

X. PSYCHOLOGICAL ASPECTS OF LABOR TURNOVER

THE BROAD SIGNIFICANCE OF THE TURN- OVER PROBLEM ¹

This excessive shifting from position to position clearly demonstrates that something is wrong with industry. In diagnosing its causes we are at the same time enabled to suggest certain remedies that may lessen it.

Some of the more prominent causes are:

1. Poor methods of employment and discharge. Men are generally hired en masse, with little regard to their qualifications, and fired summarily if they do not make good on the jobs upon which they are tried out. The power of employment and discharge is generally vested in the foreman of each department. These men are rarely skilled in the tactful handling and judging of men.

2. Poor methods of promotion within the factory. Work in one position rarely leads to a higher position. The workman in any particular plant relies, therefore, upon a change to some other plant to better his status.

3. The seasonal nature of many industries. The turnover is necessarily large where the volume of output is not evenly distributed over the year. After the "peak" has been passed, many workmen must be laid off. If the peak reoccurs within a few months, a new force must be employed. Positions of short duration, spelling a high turnover, are the inevitable concomitants of seasonal industry.

4. Juvenile labor. Children rarely stay long in one position. The fourteen- to sixteen-year-old child is restless and wants to move about. A regular, settled employment rarely satisfies him.

5. The monotony of modern factory labor. This is rarely mentioned as a cause of labor turnover, but on a priori grounds

¹Paul Douglas. The Problem of Labor Turnover. American Economic Review. Vol. 8. 1918. p. 306-16; Vol. 9. 1919. p. 402-5.

we must infer that it exercises tremendous influence. Specialization and routine labor have rendered industry so dull that it is no wonder the modern artisan frequently throws up his job and seeks another plant from sheer weariness.

6. Low wages. A plant that pays low wages cannot hold men long. They regard the job as a makeshift and will leave it as soon as they can find another.

Thus some of the causes of this newly discovered phenomenon are long-recognized evils, while some have been but newly brought to light. The remedy most frequently proposed by students of the situation is the installation of a specialized employment department to have complete charge of the hiring, handling, and firing of men. In most factories the task of employment and the discharge of men is confided to the foremen of the various departments. Hands are both hired and fired in a hit-or-miss fashion. Many firms keep no employment records at all, and most of those that do keep such records have only scanty material. They seldom ask the reasons for the workman's leaving, nor do they measure the turnover, department by department. The centralization of employment and discharge and the concentration of responsibility would permit the use of scientific methods.

Such a department could lessen the turnover in the following ways:

1. By the use of a better method of selecting employees. Physical tests would eliminate a considerable number that are now employed only to be shortly discharged. Though mental tests have not developed as yet so far as to make it possible to assign men to the particular jobs for which they are best adapted, at least those mentally incompetent for industry could be eliminated. The various jobs in the plant could, moreover, be analyzed in respect to the amount of skill and intelligence required of the operative. The workers could then be divided into rough groups according to their previous training and innate mental ability and assigned to the corresponding grade of work. A centralized personnel department could follow up and verify work references and thereby classify workers on the basis of past experience. And it could maintain a waiting list, so that when new men were needed they could be chosen largely from men about whom something was known instead of, as now, picked up off the streets.

2. By a system of follow-up work for the new employees. This would include taking them to their place of work and indicating a friendly interest toward them. The training should be given preferably by special instructors and not confided to the foremen. In many cases it is best to give the new men preliminary training before they are actually placed in any department. Moreover, the working conditions should be closely watched by the personnel department in order to insure proper ventilation, lighting, the prevention of dust, and the lessening of fire and accident risks. To keep a record of absences, classified by individuals and by causes, would also be a legitimate task for such a department.

3. By an investigation of the reasons for the successes and failures of individual workmen. The method commonly employed is to discharge a workman if he fails to make good on a particular job. This involves a great waste. A workman may fail on a specific job and yet be a valuable man for the concern. It may be that the antagonistic attitude of the foreman or the men is such that he cannot do himself justice. It may be that he is ill-adapted to that particular position but would be perfectly competent in a position in some other department. The worker embodies a considerable investment of capital by the employer and is worthy of at least another trial before he is discharged. The personnel department can find out the reasons for his lack of success and act accordingly.

Should the worker succeed in a given position he should be commended and assured promotion. A well-defined promotion policy would indeed save many a plant a great deal of dissatisfaction and lessened efficiency. The efficiency of the plant and the loyalty of the workers may be further heightened by the institution of discussion groups at which plant problems can be explained and workmen's ideas solicited. This will also serve to bring to light hidden talent which could be utilized in executive work.

The creation of such a personnel department, charged with these functions, is but the logical extension to the human side of industry of the scientific principles that have hitherto been employed on the mechanical side. It merely strips the department foreman of his employment functions and enables him to concentrate his attention upon the actual production of goods. With this splitting of the task greater specialization and effi-

ciency can result. The centralized employment department has been tried in many plants and, on the whole, has been very successful. Some illustrations of its success are (1) the reduction by the Dennison Manufacturing Company of its turnover from 68 per cent to 37 per cent a year; (2) the reduction of the turnover of the Joseph and Feiss Company of Cleveland, Ohio, to one third its former amount; (3) the lowering of the Plimpton Press turnover till it is now only 10 per cent a year; (4) the decrease in the Ford turnover from 416 per cent to less than 80 per cent. Other factors besides that of the creation of such a department contribute to the marked decrease in three of these plants. Forms of profit-sharing were introduced into the Dennison and Ford companies, while the Dennison and Feiss plants also succeeded in regularizing their output. . .

The large turnover of children between fourteen and sixteen is merely another proof of the economic and social wastefulness of this class of labor. Industry and society would be much better off were the age of entrance into industry raised generally from fourteen to sixteen years. In so far as the labor turnover is due to the monotony of machine labor, few remedies within the plant can be devised. The men, to be sure, can be transferred from one machine to another. But this is about all. The balking of man's innate tendency toward contrivance seems to be an inevitable consequence of the machine era. New avenues must be opened, outside of industry, for its legitimate expression.

Whatever may be the final steps taken to solve this problem, its recognition signalizes a marked advance in the development of human engineering.

INDUSTRIAL ABUSES UNDERLYING TURNOVER ¹

The essential fact, with respect to labor turnover, is that fully half of our labor passes through our industries rather than into them. Employers clamor for more men while they let those they have slip through their fingers. Workers complain of lack of work, though yesterday they made no effort to hold

¹ Don D. Lescohier. *The Labor Market*. p. 113-16, 118-21. Published by The Macmillan Company. New York. 1919. Reprinted by permission.

their jobs they had. "Suddenly it is found that one of the greatest costs of labor is not the inefficiency of the individual but the lack of good-will as a whole. A certain proportion of our employers have inaugurated definite labor policies calculated to hold a steady labor force for their businesses and have achieved a success that has surprised themselves. Half of our workers, more or less, have fitted themselves into some industry and become a part of its permanent labor force. Why does a procession of workers pass through the plants of the rest of the employers? Why do a large part of the workers keep step in that procession instead of becoming a part of some specific business? Dr. Sumner Slichter has given us a somewhat thorough analysis of the causes of labor turnover in factories. He distinguishes eight general causes for the shifting of labor: (1) Reduction of the labor force by the employer on account of reductions in output due to industrial depression, seasonal fluctuation of business, completion of contracts, and other decreases in his need for labor. (2) Disagreeable characteristics of the job, such as low wages, irregularity of work, excessive hours, Sunday work, lack of opportunity for advancement, or distance from the workman's home. (3) Faulty methods of handling men. (4) Disagreeable relations with fellow workmen or quitting to leave with a friend. (5) Causes pertaining to the worker, such as wanderlust, desire for a change, ill-health, age, death, marriage, or lack of fitness for work, insubordination, laziness, or mischief making. (6) Attractive opportunities in other places or other establishments. (7) Dislike for the community in which the work is or of bad camp conditions, or desire to go to a particular community. And (8) conditions in the family of the worker, such as desire to move to another community or locality for the sake of the family, or sickness in the family that causes quitting of a certain job. Add to these the competitive recruiting of labor by employers, the lack of an adequate public employment office system, and the migratory habits engendered in the American people by the industrial allurements which appear now here, now there, in a developing country, and we have mentioned the important causes of rapid turnover of labor in America.

The migratory habits just referred to have probably received less emphasis in this connection than they are entitled to. Mechanics, laborers, clerks, salesmen—all sorts of workers—are

continually influenced by the characteristic American hope that there is a big opportunity *somewhere else* for them. The very ambition which is a spur to progress in America is also a force which causes restlessness in the job and leads to failure in thousands of cases. The spirit of the frontier, which has done so much for our development, has produced its unfortunate by-products. Like a will-o'-the-wisp, it leads multitudes of our people from job to job and place to place until many have their feet entangled in a slough of irregular habits and inefficiency. There is only one way to become an expert, whether at washing dishes, digging ditches, or making watches or battleships. It is by study and practice. The man who changes jobs frequently and drifts from industry to industry never learns any occupation thoroughly. But this is not all. Irregular work produces its results. First the worker drifts, and then he can't anchor.

It is not possible to estimate the cost of excessive turnover of labor to the nation. We know that the cost is enormous. The employers' losses have been estimated at from \$20 to \$250 per extra man hired; the exact figure depending upon the degree of skill required by the work, the extent to which the new man slows down or impairs the work of fellow workmen, and the period of time which elapses before the new worker is able to reach his maximum productivity. It takes the time of executives to interview, hire, and break in the new employee; machinery and appliances are not used to the best advantage during the learning period; more materials are wasted; plant wear and tear is increased; more accidents occur; there is loss of goodwill and business due to mistakes of inexperienced help; and the esprit de corps of the business is lowered by the influx of strangers. When the turnover is large it is not possible to train the new employees thoroughly, and the average efficiency of the whole force is kept at a lower point.

The workers' losses are equally large. Their earning power is wasted while unemployed; they have to accept lower wages when at work because they are not so efficient as if steadily employed; the skill they acquire on one job is frequently valueless when they take up the next one; their character and working ability are deteriorated by frequent idleness and shifting; they have greater accident exposure; they find it increasingly difficult to obtain work after they are forty years of age; and they are

sapped of ambition when they are at work by the knowledge that they will soon be discharged.

The worker who is subject to frequent changes of employment is robbed of that elemental self-respect which is the dear possession of the man who has an occupation, however humble, in which he sees himself performing some useful part in the world's work. The shifter is industrially homeless; and a home—domestic, political, religious, and industrial—is one of the needs of human nature. A man cannot have the proper attitude toward his work or his life who is constantly made to feel that no industry needs him. . .

It must be recognized, in the first place, in any program of turnover reduction, that the shifting of workers from plant to plant is characteristic of a fraction of the labor force, not of the entire labor force. The point has already been made that a considerable percentage of the wage earners work steadily for the same employer or at least at the same occupation and in the same locality; that another large group work as steadily as the fluctuating labor demand permits, and that the high turnover of labor is localized in a minority of the total labor force. The problem which confronts us is to develop policies that will check the frequent change of jobs by that portion of the labor force with whom changing jobs has become or is becoming a habit.

The task, as already suggested, is one that requires cooperation between industry, education, and an organized labor market. Industry holds the key to success in its hands. Nothing that the educational systems or an employment service can do will materially reduce labor turnover if industry fails whole-heartedly to undertake its part of the work. But American industry is not going to fail. Progressive American employers have already inaugurated new labor policies in their establishments which have materially reduced their labor turnover. They have demonstrated what can be done by the employer, and have contributed valuable experience on methods. They have shown that new methods of hiring, training, supervising, transferring, and promoting labor will mitigate or eliminate many of the industrial causes of turnover. They have discovered that a closer knowledge of the personal points of view, prejudices, and problems of their workers enables them to overcome many factors personal to the individual worker which would have led to irregularity of employment.

Industry's objectives must be the selection of employees fitted to the work to be performed; the stabilization of production to give those workers the greatest possible steadiness of employment; and the creation of working conditions and opportunities that will cause the workers to *want to stay* with the establishment when they are employed. The writer ventures to suggest that an essential element of success in this endeavor must be the creation of opportunities for self-advancement. It is impossible to keep the energetic workman in an establishment if there is no hope of better wages or better work there. Ambition is one of the causes of labor turnover. Not all workers shift because they lack the steadiness to remain. Many seek with a new employer the opportunities which their last employer neglected to provide. This is true of thousands of workmen, even common laborers, whom employers believe are simply unsteady. Only too frequently workmen see the employer go outside the establishment for the man to fill the good position instead of seeking out some present employee for promotion. It is not strange that they conclude that changing employers is the only road to advancement.

The relation between industrial training and regularity of employment was discussed in the preceding chapter. But the contribution of an educational system to turnover reduction cannot stop with industrial training. Many non-industrial and non-economic motives play a part in causing the unsteadiness of that group of workers who shift most frequently. Their consumption standards are often as deficient as their industrial skill. Their sense of values is warped.

The writer was on a train and heard a young soldier say: "Well, I hope when I get home that I can get a good job." He asked the young man, "What is your idea of a good job?" "Good pay and easy work," was the reply. This absence of a conception of service and accomplishment as a necessary characteristic of a "good job," with the absence of the desire to give an equivalent in service for wage received, is a common defect in the minds of those workers who are found *frequently* looking for a job. The search for "easy money" is of course no more common among wage earners than among the people of other economic groups. You can find among business and professional men a large number of individuals who are continually risking their money in speculative investments in an

effort to get rich without effort. The same point of view appears in the wage earner in the form of seeking for such "good jobs" as the young man described. Just as the speculator "takes a flyer" at this or that investment, so this type of wage earner "takes a flyer" at this job and that. *The search for income without effort, for prosperity without sacrifice, for comfort without earning it*, is a subtle cause of labor shifting that can be reached only by educational and home influences that send young people into the world with *sound ideas* and *sound valuations*.

REFLECTIONS OF A WORKER ¹

Perhaps the worker's viewpoint regarding labor turnover will be interesting. I accidentally picked up a copy of Industrial Management and read an article concerning labor turnover. I have worked around machine shops for twenty years, and it has got so of late years that it is almost impossible for me to hold a position for any length of time. Three months is quite a long time for me to hold down one job, but I would rather work in one place steadily than move about.

I wonder if it has ever occurred to the manufacturer whose foremen have anywhere from twenty-five to one hundred men under them, and that where the foreman has the least number of men working for him, his responsibilities are at a minimum, therefore it is to the interest of the foreman to hold his force down as much as possible, as then he has less to look after. I have seen foremen try to discourage their men in every possible manner so as to have less to do.

What causes the turnover in many factories is the very poorly equipped plant. A man will work in such a place just long enough to "get a stake": that is, if he is a good mechanic and has served his time as a machinist. Next in point of objection is the "system." Most large plants are over systematized, or have misplaced system. If instead of practicing economics in the factory, they would install some "system" in the upkeep of the equipment the turnover would decrease to a certain extent. Then the plant that does not work its employees in excess of

¹ A Worker's Viewpoint of Labor Turnover. By a Laborer. Industrial Management. April, 1919. p. 36.

forty-eight to forty-nine hours per week has the best chance of holding them. Again a manufacturer thinks he is always "top dog" and is apt to impose upon his workers rules and regulations that are entirely unnecessary.

Just because a man has money tied up in manufacturing institutions is no reason why he should get excessive profits out of these plants at the expense of his workers, so that he may lavish these profits upon fast women, or mere society women, or spend most of his time globe trotting at the expense of the workers.

HOLDING THE MEN WHO HAVE NO TRADE ¹

To understand the unskilled worker one must be very careful to put himself in the worker's place, and delving deeper and understanding more, must master the hard task of finding out what the man himself feels and thinks.

When a man does this successfully one of the things he will discover is that the coming and going of the casual worker which seems to him so foolish and reckless is not always entirely without reason. The tasks which many of these men are called upon to do are not only disagreeable, but to a degree unhealthy. There is dust or lint or steam or dampness or undue dryness. There may be drafts or extremes of heat and cold. These men do not know how to take the best care of themselves and would not take the pains to do so if they knew. Often when they go on the job they are not in the best of health, because of past sicknesses or indiscretions. Especially is this true today when we have no constantly renewed stream of young, sturdy unimpaired immigrants to draw from.

Many a casual worker, after a little while on the job, finds that his physical condition is poor, he gets out of sorts or feels sick, and thinks that a change will do him good. Frequently the physician to whom he goes tells him that his work is disagreeing with him and that he must make a change. There is a wealth of pathos in the fact that so many men leave because the conditions of the job have made them unequal to it. Especially is this true of men over forty years of age. The

¹ Harry W. Kimball. Handling the Men Who Have No Trade. *Industrial Management*, June, 1920. p. 509-10.

vicissitudes of their restless years of toil and often dissipation have left a heritage of weakness which inevitably shows itself after a little time of strenuous work. Many of these men who quit, and are accused of laziness and a disinclination to work, have simply used up whatever resources of strength they had and must loaf for a while. They are really all in physically. It is not in them to work. While the destructive forces of strong drink are no longer a factor, sexual excess still exists, and so also does the bad air of the tenements in which they live or of the boarding houses in which they bunk. Often sufficient sleep is not obtained. Although one might not suspect it to look at the casual worker who says he is through, yet it is often for good reasons of physical disability, for a lack of physical stamina, that he has thrown up his job.

Another factor in the constant shifting of these workers is that often, although their work may be very simple, yet it is never carefully explained to them just what they are to do. The result is that they do the work indifferently or poorly and on account of this are called down by the foreman, probably quite a number of times. Then it fixes itself in the worker's mind that he is not doing satisfactory work. In a dim sort of way he knows that he is just getting by on the job, and barely that. Then from his past experiences he concludes that in a few days at the most he will be fired, and to avoid that he simply quits of his own accord. The next morning he does not show up. A little kindly interest on the part of the foreman or the employment manager, a little more careful instruction regarding his work might have kept him for many a day.

But in spite of the most careful selection and instruction a large proportion of these men without a trade will be floaters. The constant temptation is to hire these habitual drifters without much thought, these men who have not come to stay, because they can do as well as anyone the rough manual labor which at the moment needs to be done. If there are carloads of coal to be unloaded, just get anyone that is to be found to help. It matters not that in two or three days or a week he may disappear. At least you have obtained that much work from him. The cost of such labor turnover while considerable cannot by any fair estimate be figured in the large amounts which are usually assigned to the cost of hiring and firing skilled workers.

It is beginning, however, to be recognized that the retention

of these unskilled workers has its real value, that if they become happy and contented and are made to feel that they are a part of the organization they will contribute something to the *esprit decorps* of the plant. When they stay long enough to grow accustomed to the ways of doing things, to become familiar with the layout of the plant, to take advantage of the benefits offered, like the infirmary, group life insurance, mutual life insurance, mutual benefit association and lunch room, they are much more valuable than the casual worker who may only stay for a day or two. Therefore it is certainly worth while to make an effort to stabilize that portion of the working force which has no trade.

HOW TO REDUCE LABOR TURNOVER ¹

(An outline of the essential part of the scheme pictured by the author. . . Note that this scheme is intended to be complete and is therefore impossible of universal application in toto.)

1. Preliminary Measures:

- a. Attempt to learn the true cost of turnover in your plant in order to know how much you can afford to spend to eliminate it.
- b. Keep adequate records as means of analysis of sources and causes of turnover.
 - (1) Historical and statistical record separate for each employee including date of employing or transferring, rates, earnings, bonuses, defective work, complaints by or against man, absence, tardiness, periodic certification of foremen, date of quitting and reasons.
 - (2) Turnover by departments, by causes, by weeks and months and years, and by classes of skills.
 - (3) High and low earnings by departments.
 - (4) Defective work by departments.
 - (5) Absenteeism and tardiness by departments.

2. Fundamental Remedies:

- a. Hire the right men for the jobs.

¹ Boyd Fisher. How to Reduce Labor Turnover. Annals of the American Academy. May, 1917, p. 10-32.

- (1) Work up good application lists which is a "prospect file" by vigilant search of sources of supply, by industrial census of your vicinity, by courteous and hospitable treatment of applicants at all times, and by getting a good name for your factory even from men who have quit you.
 - (2) Using your present work force as a "prospect file" cooperate with agencies for industrial education, supplementing them with apprenticeship training, to build up a system of promotion and transfer.
 - (3) Secure time to examine new applicants thoroughly by receiving advance notice of need and by using adequate assistance in employment department.
 - (4) Hire in accordance with written specifications for each job, prepared at leisure, and after due consultation and criticism.
 - (5) Prepare a definite scheme of direct examination for each type of work, using as much of the character reading methods as your experience approves.
 - (6) Examine physically with view both to general fitness, to suitability for specified job, and to need of later up-building.
 - (7) Visit homes of desired applicants.
 - (8) Check up records of previous employments.
 - (9) Hire only those who can earn an adequate wage.
- b. Pay an adequate wage.
- (1) Study cost of and facilities for decent living for each workman and use results in setting base rates.
 - (2) Give special study to cases of inefficient workmen, to see if money troubles are affecting them.
 - (3) Centralize and pay off at discount, debts of overburdened workmen.
 - (4) Promote mutual aid association.
 - (5) Establish legal aid bureau.
 - (6) Pay weekly.

- (7) Discourage alcoholism.
- (8) Instruct in proper use of income.
- (9) Encourage thrift and home-building.
- (10) Where special causes for increased living cost obtain, attack them, as by cooperative stores, housing measures, etc.
- c. Provide steady work.
 - (1) Give piece workers steady flow of material during the day, by proper scheduling system.
 - (2) Regularize production throughout the year to minimize lay-offs and shut-downs.
 - (3) Abolish the annual physical inventory with continuous checks.
 - (4) Make repairs promptly and provide a sufficient reserve supply of tools.
- d. Don't fire hastily.
 - (1) Check up foremen whose departments show high turnover records through men's quitting.
 - (2) Don't let foremen discharge at all.
 - (3) Give unsatisfactory men at least one chance through transfer.
 - (4) Establish employment committee to review cases of discharge where men appeal.
 - (5) Establish foremen's club to study ways of getting along with men.
 - (6) Interview, before paying off, men who quit voluntarily.
3. Supplementary Remedies:
 - a. Start new men right.
 - (1) Make clearly understood agreement as to starting pay and schedule of advances.
 - (2) Introduce new men to bosses, to fellow-workers, and to physical surroundings, and acquaint with rules and facilities of plant.
 - (3) Instruct men thoroughly in new task.
 - (4) Advance money or meal tickets to beginners short of funds.
 - (5) Help beginners speedily to get on piece or bonus rates.

- b. Promote physical efficiency.
 - (1) Establish physical department.
 - (2) Examine all workmen periodically and provide machinery for following up those found to be defective.
 - (3) Provide adequate light, heat and ventilation.
 - (4) Reduce noise, dirt and noxious odors and fumes.
 - (5) Purify oils, waste and other supplies.
 - (6) Purify drinking water.
 - (7) Provide sanitary lockers, wash rooms and toilets.
 - (8) Insist upon good teeth and good eyes by using, at least on part time, the services of a dentist and an oculist.
 - (9) Have nurses or doctors visit those kept home by illness.
 - (10) Provide mid-workday meals at plant.
 - (11) Provide good tools and fatigue minimizing equipment.
 - (12) Shorten work-hours while securing fair output.
 - (13) Provide at least three rest periods during the day.
 - (14) Arrange for yearly vacations with pay for all employees. This can be on the basis of an efficiency record or punctuality record.
 - (15) Promote athletics.
- c. Foster good habits.
 - (1) Investigate causes of unexcused absence.
 - (2) Fix strict penalties for tardiness and unexcused absence.
 - (3) Bonus regular attendance.
 - (4) Establish pay system that encourages and rewards accuracy, high output and punctuality.
- d. Give all employees a hearing.
 - (1) Hear complaints at all times, no matter how put forward.
 - (2) Hold regular shop meetings by departments and by divisions to hear men's ideas.

- (3) Establish system for considering written suggestions from men; and rewarding with commendation, prizes, or promotion, all thought worthy, and acknowledge all such suggestions without exception.
- (4) Encourage all forms of self-directed organization, whether of athletic, social, or cooperative enterprises—provided such organization is not subject to orders from persons outside of your plant and contrary to its interests.
- e. Make work in your plant a sufficient career.
 - (1) Establish system for granting unasked-for pay increases as deserved.
 - (2) Discover ambitions of men for future transfers and promotions.
 - (3) Help train men to new tasks.
 - (4) Transfer with some liberality.
 - (5) Encourage men to improve general education by reimbursing for outlay on courses of study as completed.
- f. Provide for future of all workmen.
 - (1) Purchase group insurance for all workmen.
 - (2) Pension disabled or superannuated employees.
 - (3) Share profits on some form of stock-sharing basis, possibly in lieu of pension scheme.
- 4. Provocative Remedies:
 - a. Fire when other methods clearly fail.
 - (1) Those with chronic social diseases.
 - (2) Those whose morals menace the high standards of fellow employees.
 - (3) Those who persist in agitation.
 - (4) Those who will not quit drinking.
 - b. Submit all such discharges to appeal committee on which employees are represented.

XI. THE BUILDING OF LOYALTY AND MORALE

A BROAD SURVEY OF PSYCHOLOGICAL CAUSES ¹

The industrial morale is closely related to the state of contentment or unrest of the working force, the two are not to be confused. Industrial morale refers to the degree of cooperation extended by the employees of an enterprise to the management in the course of their work, the interest they manifest in their work, and in the enterprise by which they are employed, and their willingness to assume a share of the responsibility so that their work is properly and expeditiously done. The test of industrial morale is the degree of cooperation extended by the men to the management in the operation of the plant. . .

Of the numerous causes which combine to create low industrial morale several of great importance may be passed over with little or no discussion. Fatigue, ill health, and nervous strain are well known to cause low morale but analysis of the extent to which modern industrial conditions and processes produce these physical and nervous causes must be left to the physiologist and the psychologist. No explanation is needed of the effect upon morale of the belief, widespread among workmen and far from wholly unjustified, that if they work too hard they will work themselves out of their jobs. Dissatisfaction of the workers with their treatment by the management is to be counted among the most important causes of low morale, for it is common knowledge that men tend to hold back and to do as little as possible for those against whom they feel a grievance. Another important, tho self-evident, cause of low morale is the widely prevalent belief among workmen that there is gross unfairness in the distribution of burdens and benefits in society, that the wage earners, who perform the heaviest, dirtiest, least

¹ Sumner H. Slichter. Industrial Morale. Quarterly Journal of Economics. Vol. 25. November, 1920. p. 36-60.

interesting, and most disagreeable tasks, receive unreasonably small shares in the good things of life. Workmen who feel this keenly do not respond readily to attempts to interest them in more production. They feel that they already are doing more than their share of the disagreeable and onerous work that is to be done and incline to seek compensation for the unattractiveness of their jobs and the meagerness of their pay by doing less rather than more whenever opportunity occurs. Mitigating the severity or disagreeableness of their jobs by "taking it easy" is the only means at their disposal for partially equalizing what they conceive to be the unjust distribution of benefits and burdens and they use this means without compunction. Finally, and perhaps most important and self-evident among all the causes of low morale, is the use of drive methods by managements to sustain and increase output. A more effective means of creating low morale could scarcely be conceived, because the drive system renders conflict instead of cooperation between the men and management inevitable. The drive system recognizes no standard day's work. On the contrary the aim is constantly to force up the speed of work. The men naturally resist these efforts. In consequence the working pace becomes the subject of a constant struggle between the men and the management. But men do not cooperate with those against whom they are struggling. Instead of affording a basis and inducement for cooperation, the drive system compels the men to concentrate their attention and ingenuity upon limiting output, and upon frustrating the efforts of the management to push up the pace...

Altho the prevailing philosophy of business for profit rather than for service may perhaps be justified on the ground that no other arrangement provided sufficient incentive to sustain vigorous business activity, the acquisitive philosophy, when adopted by the workmen, has the serious drawback that it is fatal to morale and efficiency, because it justifies workmen in rendering as little service as they dare give for as high pay as they are able to exact. The adherence to this philosophy by business men renders inevitable its adoption by the workmen. . .

Low industrial morale results from fear and resentment inspired among the workers by certain managerial policies. Mr. MacKenzie King has emphasized the importance of fear as a complicator of industrial relations. It is not generally appreciated, however, to what extent fear of the management by the

workmen has been deliberately and consciously fostered. The steady pursuit of a policy designed to arouse fear of the management among the workers was a natural accompaniment of the so-called drive system of management, the success of which depended upon the men's willingness to submit to being driven. In order to create a docile and subservient attitude on the part of the men and cause them to submit readily to being driven, managements deliberately sought to foster fear of themselves among the men. To this end they maintained as a matter of policy a brusque, more or less harsh, distant and stern attitude toward their men. They resorted to discharge on fairly slight provocation. They discouraged the airing of grievances. The man with a complaint was told, "If you don't like things here, you can quit." To be lenient or friendly or considerate, to give ear to complaints or to grant redress would cause the men to feel that the management was "easy," that it could be "bluffed" or "worked" and that it need not be feared or carefully obeyed. It would destroy the docile, submissive attitude which was essential if the men were to yield readily to drive methods. Above all, it was felt that the men must be made to feel that the management was strong and powerful, determined to have its way and not to be trifled with.

This process of inspiring fear among the workmen was admirably adapted also to inspiring hatred. In proportion as the management succeeded in arousing fear of itself among the men it succeeded also in arousing antagonism. The effect upon morale is obvious. . .

Among the things which induce men to feel responsibility for the character of their work is the conviction that the job is important, that it makes a difference how it is done, and that in doing it the workman is making himself of some importance. Take away this feeling that the work is important and it tends to become drudgery, which the men then seek to lighten by doing as little as possible. Modern industry contains a number of influences which tend to diminish the importance of their work in the eyes of the workmen and consequently their disposition to feel a keen responsibility for the character of their workmanship. . .

Finally, the policy pursued by many managements, of endeavoring to build up in the men the feeling that they are of little importance, their services of little value, and they them-

selves easily to be dispensed with now prevents the men from appreciating the importance of their work. This policy is similar to the one previously discussed, of endeavoring to create fear of the management, and, like it, has been pursued as a part of the drive system and for the purpose of rendering the workmen more submissive to drive methods. Managements have believed that if the men learned to regard their work and consequently themselves as important, they would lose their docility, become self-assertive and difficult to control. To render them docile and easily handled, it is desirable that they regard themselves and their services as of little importance to the enterprise. Hence by such means as criticizing freely but commending sparingly, a hair-trigger readiness to discharge, telling those with grievances to go elsewhere if dissatisfied, and by the general attitude maintained toward the men, managements have endeavored to build up among them a feeling that they are of little consequence. . .

Adequate recognition of merit and good service is an important prerequisite to high industrial morale. Failure of managements to recognize merit and good service adequately means much more than a mere lack of material rewards to stimulate the men to do their best. In the first place, it is important as an indication of the attitude and temper of the management. The lack of material rewards for merit naturally leads the workmen to feel that the management does not appreciate good service. No exertion is more repugnant to workers, however, than that which they believe will not be appreciated. The feeling that good service is not appreciated is nearly as potent as the lack of rewards for good service in deterring the men from exerting themselves to render service of exceptional merit. In the second place, failure to recognize merit is important because it tends to deprive the men of definite hopes for better things in the future. Men can endure disagreeable and discouraging conditions for a considerable period without serious lowering of morale, provided they have reasonable expectations of better things. But the hope of better things tomorrow is needed to take their minds off the difficulties of today. To men deprived of reasonably definite expectations for the future the difficulties of today seem doubly onerous. Because the work in modern industry involves much that is disagreeable and onerous, it is important, in order to sustain high morale, that

workmen see something better ahead. Without such visions they become easily discouraged, disgusted with their jobs, inclined to develop the "don't give a damn" spirit and to seek relief from the disagreeable and discouraging features of their work by doing no more than is necessary. . .

The development of the highest degree of interest in the job and the keenest sense of responsibility for the character of its performance presupposes a belief that the job or at least the workman's connection with his employer is more or less permanent. Hence the transitory and precarious nature of much of the employment in modern industry is to be accounted a source of low industrial morale. Herein appears the significance, from the standpoint of morale, of the absence of machinery for the adjustment of grievances, and of the failure either to protect workmen against arbitrary discharge by provision for truly judicial inquiry into alleged cases of incompetency or misconduct, or to protect workers against lay-off by regularization of production or by reduction of the working period instead of the force in slack times. . .

Most important of all in creating the prevailing low state of industrial morale is the workmen's conception of the relationship prevailing between themselves and industry—the feeling on the part of wage earners that instead of industry being conducted for their benefit as well as for the benefit of the stockholders, it is devoted almost exclusively to advancing the interests of the stockholders, and that instead of workmen being a part of industry and insiders in it, they are outsiders whom industry is not interested in serving, but from whom it is interested in getting all that it can. . .

An active effort on the part of the workmen to promote the prosperity of industry can scarcely be expected until the workmen feel that industry is a friendly rather than a hostile force; until they believe it is devoted to the promotion of their interests rather than the exploitation of their weakness; until they believe it is interested in making wages higher not in keeping them low, in making hours shorter not in keeping them long, and in mitigating the severity of the work not in enforcing the maximum speed; until they believe they will promptly and directly share in any increase in the prosperity of industry. Wages and conditions of labor must be determined by the same principle by which dividends are determined—by the *ability* of industry

to pay more or to improve conditions, not by the *necessity* of so doing.

This appears to touch the crux of the problem of industrial morale. Workmen cannot be expected to feel the maximum interest in the affairs of industry and the greatest willingness to cooperate in order to promote its prosperity, unless they are able to identify themselves with industry, to feel themselves to be a part of it, insiders in it, and to feel also a sense of ownership in it. The feeling of belonging to a thing appears commonly to induce a feeling of ownership toward it. They cannot feel themselves to be a part of industry nor industry to be in part theirs, unless industry is devoted in a substantial measure to the promotion of their interests, unless managements strive just as energetically to raise wages as they do to raise dividends. The thing which now creates a gulf between the men and industry, which causes them to feel that they are not a part of the enterprises for which they work and that the enterprises are not in part theirs, is the fact that industrial enterprises are devoted primarily or exclusively to the service of the stockholders, often at the expense of the interests of the men. When the men observe how completely outside the purposes of business enterprises is the promotion of their interests, they cannot escape feeling themselves to be merely outsiders.

POSITIVE ACHIEVEMENTS POSSIBLE UNDER MOST ADVERSE CIRCUMSTANCES¹

By tradition American lumbermen are thriftless—working a whole season in the woods, they accumulate a little money only because they can find no place to spend it and that money is commonly gone within about two days after they hit the first town. A happy-go-lucky lot, they are at the mercy of the first employer who finds them when broke; the employer, holding the money and the food bag, always has the advantage. Where all the lumbermen were Americans a certain comradeship existed between the men and the boss.

But things, within the last dozen years, have changed to a great extent, in the Northwest; the young Americans seldom go

¹ Brigadier General Brice P. Disque. *How We Found a Cure for Strikes*. System, September, 1919. p. 379-84.

into the woods and the elder generation has passed on to ownership of the industry or to other occupations.

In their place has come a large number of foreigners, ignorant of American ideals—the same sort of men that construction gangs are recruited from—and when I went into the camps these foreigners were pretty generally being run by agitators affiliated with the I.W.W. and intent upon every form of sabotage.

The American spirit seemed to have gone. The prospects for getting out aircraft lumber looked pretty blue. Employers and employees each accused the other of being profiteers. The operators were a hard-headed lot. Being mostly men who had risen from the ranks, who had worked twelve and fourteen hours a day in order to attain their present efficiency, they had never considered any work too hard for themselves and they did not consider any work too hard for those whom they employed. They had gone through the mill and they expected others to go through it. They were fighters, every one of them. They fought to keep up prices and to beat down labor. In order to keep up prices they were willing to curtail production but when prices were high they wanted all possible production. To get that production they were willing for the moment to pay almost any price.

They hired indiscriminately and fired ruthlessly. When they needed men they bid them away from another camp but they never retained a man an hour longer than was absolutely necessary for the work in hand, aside from the nucleus or skeleton of old, regular employees.

Men were taken on from day to day, given work while there was work to do, and laid off the moment that the work slackened. No one had ever suggested that there might be anything in the nature of mutual obligation between employer and employee.

The employers got all that they possibly could out of the men at the lowest possible cost. The employee gave as little work as possible for the highest possible wage. To the employers the men were simply hired to get the work through and had to be endured. To the men the employers were monsters grinding out flesh and blood at a very high profit.

Under such conditions, naturally the labor became itinerant. About seventy per cent did not care to work at all. Regarding

their employers as natural enemies, they left disgruntled, whenever they felt that they were particularly needed. They invented the lightning strike. They "struck on the job." One employer testified that often he would start the day with a full crew, and finish with no one but a cook and a dishwasher. The labor turnover ran to one thousand per cent. The employment agencies in Spokane hired eight thousand men a month while only eight to twelve thousand men were altogether employed in the district!

My wonder was not that the production was low but that there was any production at all.

A thorough investigation convinced me that practically all the difficulties could be traced to these fundamentals:

1. Intermittent, seasonal work.
2. The persistent rumors that the employers were making enormous profits and gouging the Government.
3. The lack of any means of reaching understanding between the parties.
4. Almost indecent living conditions in the camps.

Through unanimous and quite voluntary action of the operators and employees and the authority of the War Department I had a practical control of the lumber industry. Stern and coercive measures could have been adopted. But, had I used any of these instruments of force, I should probably have failed. The service which is given under compulsion is not the kind that any one wants and generally will not produce real or lasting results.

I sold myself both to the employers and the employees. This was particularly easy in view of the fact that I had no personal monetary interest in anything that was done.

Since there was to be plenty of work until the war ended, the question of continuity of operation was not, for the moment, of paramount importance. Therefore, I first devoted myself to the equalizing of conditions so that employers could not bid men away from other plants.

To this end there was established a basic eight-hour day and a fixed maximum sales price for lumber and also a maximum wage. I am not at all in favor of price fixing or of putting other than a minimum limit on wages, but war-time conditions are different from those of peace and I was dealing with an emergency and had to use emergency measures. The particular

problem was to eliminate inducements for workers to shift from one camp to another. The worker had to be assured, not only of a good wage, but that he could not get a better wage by migrating to the next logging operation.

The maximum price of lumber did not kill the rumors of the excessive profits of the employers but it at least enabled the workers to know the exact price their employers were receiving for lumber. We then went a step further.

Up to that time the operators in the Pacific Northwest had never known how much it cost them to cut and market lumber. They had just completed a system of uniform accounting, and when the results arrived I suggested to the employers that they take them up with committees of their employees, so that every single fact would be in the hands of the men they hired. This was revolutionary. But finally I prevailed upon them to lay them on the table. The employees went with suspicious care into all the accounts. They saw the exact relation of their wages to the profits and they also calculated how much of the profits the Government would take by taxation.

The committees went back to their fellows with exact figures that contradicted the preachings of the I.W.W. that the employers were getting everything and the workers were getting nothing. And let me say right here in all fairness that the lumbermen of the Pacific Northwest represent one great industry which did not profiteer during the war.

The average worker is no fool. He does not want to kill the goose that lays the golden eggs, but he will certainly not take his employer's unsupported word on the question of profits.

Having demonstrated to the men by the books that the employers were not making exorbitant profits, it became possible to ask them to play fair and to join with the employers in bettering the condition of the industry.

The first requisite of fairness is to have all the cards on the table; we had all of them on the table. I had learned during seventeen years as an officer in the Army, that it is not the power to enforce obedience, but the willingness to obey, that brings results, and that an absolutely square deal will inevitably induce that willingness. I carried that same thought into the management of a large state prison some years ago. That prison was also an industrial establishment doing a business of three million a year; instead of running it as a prison I managed

it as a factory. We raised wages, reduced hours, and got together in frequent talks to explain what we were trying to do. And the prisoners cooperated gladly. I wanted to have those same basic principles at work cutting lumber.

We had meanwhile organized the "Loyal Legion of Loggers and Lumbermen" on a patriotic basis. The members pledged themselves to do their part in the winning of the war.

Our only object was war and we had no thought of a permanent organization for the management of the lumber industry. I was simply recruiting an industrial army—a big army of nearly two hundred thousand men scattered among more than a thousand camps and mills in three states.

The agitators had of course preached against the war with the usual text that it was but another capitalist scheme to bear down the worker and they had made some headway, but it did not take long for patriotism to sweep away the obstructionists. In the forming of the organization, patriotism had its large part but I am sure we should not have succeeded without the coupling of substantial justice with patriotism.

During the first year we held four conventions to which came representatives of the various camps of the sections, and out of them grew the Headquarters' Council representative system which I shall presently describe. The big thing is that once the employers and the employees each found that the other was perfectly human, a great many matters which had formerly seemed impossible of settlement now appeared to be merely subjects for mutual discussion. That is always the case—let people sit down and talk and they will find a solution for nearly anything—if only the conviction exists that both sides want to be fair.

The early elections for workers' members of the Headquarters' Council showed the attitude of the workers toward representation. The delegates at the meeting to nominate and elect these members did not know one another; of the various nominees probably not more than two were known even by name by the vast majority of those present. A delegate suggested that each nominee tell what he expected to do if elected—remember these men were supposed to be ultra-radicals. It would not have been surprising if the occasion had been taken to let off a good deal of anti-capital stuff. But nothing of the kind happened; two

or three nominees started on approved I.W.W. tirades, but they did not get far—the delegates howled them down; they wanted to hear doers and not talkers. Finally they elected their representatives—Americans, who had stated the most sensible and constructive ideas on these points:

1. To discover first if the operators were sincere in their intentions, or if there was "a nigger in the woodpile."

2. The stabilization of the industry so that twelve months' work might be given.

3. Keeping in touch with constituents so that, as representatives, they would always represent. . .

The Armistice came with the Northwest lumbering going at full swing. Instead of a limitless market with guaranteed prices and wages, operators and workers saw ahead a very unsteady market, unknown prices, and a possible return to worse than the pre-war conditions. After a taste of better living nobody wanted to go back to the old ways. They had discovered that, acting together, the industry could do more than if it were composed, as before, of a thousand camps disorganized on the throat-cutting basis.

I had no longer any right to mix into the industry beyond the winding up of affairs; as a war measure, the Loyal Legion was scheduled to pass out of existence. But the members thought otherwise. They would not have it die; they wanted it and in two conventions held in December, 1918, the one in Portland, Oregon, and the other in Spokane, Washington, the Loyal Legion of Loggers and Lumbermen began as a peace organization, faced with the reconstruction of the lumber trade in the Northwest. They drew up a constitution and by-laws and the objects as stated in the constitution give an idea of the broad purposes which dominated:

To maintain the basic eight-hour day.

To ensure to the workman a just and equitable wage, and to the employer a maximum degree of efficiency.

To standardize working and living conditions in camps and mills. To create a community spirit by the promotion of matters pertaining to public welfare, in each locality.

To encourage, when and where it is found feasible, cooperative hospitals for the care of the sick and injured, and medical attention to the families of members.

To cooperate with the legislative bodies of the various states for the improvement of laws relative to accident insurance and the prevention of accidents.

To institute, when feasible, employment service.

To further recreation and educational facilities in the camps and mills.

To provide an organization on the basic principle of the "square deal," in which both employer and employee are eligible for membership and may meet on common ground.

To promote closer relationship between employer and employee in the lumber industry.

To provide means for the amicable adjustment, on an equitable basis, of all differences that may arise between employer and employee.

To foster personal relationship and the spirit of loyalty between the employers, their representatives, and the employees.

To provide methods of informing its members upon all questions of trade interest to operators and workmen.

To favor the development of logged-over lands for actual settlers, upon a reasonable system of payments.

To develop, to the highest degree possible, loyalty to the United States and its laws and government, and to promote and demand proper respect for its flag.

The patriotic urge still remained and the following pledge which every member is required to take might serve as a model for any organization.

"I, the undersigned, firmly convinced that the best interests of both employer and employee in the lumber industry are conserved by the principles set forth in the constitution and by-laws of the Loyal Legion of Loggers and Lumbermen, and that the great principles of democracy upon which the United States was established and upon which it must continue to operate, are based upon the mutual cooperation which is the foundation of the Loyal Legion of Loggers and Lumbermen, do solemnly promise and vow that I will, to the utmost of my ability, seek to promote a closer relationship between employers and employees of the industry; to standardize and coordinate working conditions; to improve the living environment in camps and mills; to promote the spirit of cooperation and mutual helpfulness among the workers and operators, as a patriotic endeavor look-

ing toward the welfare of our citizens; to build up the efficiency of the industry for the prosperity of every individual connected therewith; and to stamp out anarchy and sabotage wherever I may find it."

In consequence of these policies the lumber industry has gone from a war to a peace basis without more than a tremor. Neither the employers nor the employees have found it necessary to talk about "reconstruction" or to hold investigations or to collect statistics. There is no unemployment and there is not even the rumor of a strike—for there is nothing to strike about. Why?

The employer and the employee are thinking in terms of each other.

THE SUCCESSFUL MAINTENANCE OF LOYALTY AND MORALE ¹

We asked this unusual manager to consider us one of his committee and give us exactly the kind of thing he had been handing out to his men the hour before, or previous hours. He agreed, and this is what he gave us:

We do not know which way the country is going. A financial readjustment is certain to come. But whatever the result White Motor wants to survive, and wants to govern itself and not be dictated to by outsiders. How can we survive and keep control of this business among ourselves whichever way the country goes? And what is there in it for you to have helped the White Motor keep on in the way it has started, regardless of what happens outside?

Let us see. There are three hundred manufacturers of motor trucks in America. A large number of them will go to the wall. We manufacture about ten per cent of the total output of the country. We want to keep that ten per cent. If we do we shall have to keep on absorbing our ten per cent of all those that go under. That means that we shall need to double our plant in, say two years, and triple it in five years. Now, if we double or triple our plant what will it mean for us?

¹ John R. Commons. *Industrial Government*. The Macmillan Company. New York. 1921. p. 3-12. Reprinted by Permission.

Well, we doubled it during the past five years and here is what it meant:

While our plant value increased from \$1,879,000 in 1914 to \$3,650,000 in 1919 our production value increased from \$9,000,000 in 1914 to over \$35,000,000 in 1919. This means that five years ago for every dollar we invested in our plant we produced about \$4.80 worth of motor trucks, and this year for every dollar in the plant we produced \$9.60 worth of trucks.

The number of employees has more than doubled. The average number of men in 1914 was 2202; now it is 5475. The production per man in 1914 was 1-92/100 trucks; in 1919, it was 2-75/100 trucks, an increase of forty three per cent.

We have increased the earnings of our employees from an average of \$15.03 a week in 1914 to \$31.64 in 1919, or an increase of one hundred eleven per cent. Our total pay roll for factory employees in 1914 was \$1,688,000, now it is \$8,835,000.

All this has been done without any material increase in the price to the purchaser of our trucks. Our price has been increased only ten per cent, at a time when all prices, wages, and cost of material have gone up fifty per cent, one hundred per cent, or more.

Looks wonderful, doesn't it? Can we keep it up? See where we must be to double in two years and triple in five years, if we can keep it up. The figures given below show the estimated factory value of production for each of the next five years:

Factory Value of Production

1920.....	\$51,961,350
1921.....	67,244,100
1922.....	82,526,850
1923.....	97,809,600
1924.....	113,092,350

The big thing is, where are we going to get the capital in order to expand? The business that does not expand is really falling behind. We must expand further than our competitors, or else we are falling behind. If we take five years we can probably build up our plant out of earnings. If we have to go too fast in order to take up our share of the business of those

who fail we may have to go and get outside capital. As long as we have the present control you can be certain that the present labor policy will be carried out. Our policy has been in the past and is now, to limit payment of dividends to eight per cent on capital stock.

On what devices does the White Motor depend for keeping up and increasing production?

The White Motor has neither any system of bonuses, premiums or piece rates. Everything is a straight day wage. No time and motion studies, no specific inducements to individuals to increase their output.

There is, of course, a very careful system of scheduling the work through the factory and there is a standard output figured out for a year ahead showing how many trucks must be made if they keep up to the plan of expansion. The year's output has been narrowed down to four types of motor trucks, with some variations within the types, and all models are scheduled for erection daily. The figure of each day's output of completed trucks is filed with the various superintendents so that the organization is familiar with the result of each day's work and the production both of completed trucks and the main assemblies, such as engines, axles, and transmissions, is published each month in the regular issue of the White-Book so that the workmen are kept informed concerning the product of the factory. No individual is speeded up by a piece rate, bonus or premium—the whole factory is simply watching that the schedule is met or exceeded. Then, if a department falls behind, or if the whole factory falls behind, the fifty-eight hundred employees want to know where the fault lies. The committees and the management begin to inquire. Cases come along occasionally where the men in a department freeze out a loafer. The management is proud of the fact that they seldom fire a man, and, most of all, that the men seldom quit.

The turnover records are astonishing. During the year 1919 the rate was about 24½ per cent. It got as low as 1.23 per cent in February; as high as 2.65 per cent in May. In 1916 the turnover was the highest—77 per cent for the year; in 1917 it was 66 per cent; in 1918, it was 63 per cent, but this should come

down to 54 per cent after deducting army enlistments. The average for other factories that year in Cleveland and vicinity was stated by the company to have been about 300 per cent.

To sum it all up, what are the White Motor's substitutes for the motion studies, piece work, profit sharing and all the other scientific methods of appealing to the individual for increased product.

Isn't it something like this? Thinking and planning for the future. Keeping the mind of every man away from whatever there is of dullness and monotony in his task. Just touching the imagination; arousing in every heart zeal for progress and pride in a great common enterprise; lighting up the most menial and stupefying task with the rays of a great industrial vision.

But all this is not as easy as it may sound. How are you going to get a good red-blooded workman to sit down and be lectured to on the subject of a great industrial vision? How are you going to get him to believe that expansion has something in it for him?

The White Motor Management does it by the policy of honesty and openness. It furnishes copies of its annual report to all employees requesting it, and sets forth in the White-Book the essential facts contained in the report. The White-Book is sent every month into the homes of every employee and it forces information about itself not only to the men but also on their wives and families. It shows what they have to fear and what they have to hope, and then promises to keep faith with them in sharing prosperity with them.

It does not offer all this information in the name of industrial democracy. The shop committee in the White Motor Company was started neither as a grievance committee nor a legislative body. The idea back of it was not in any sense the idea back of the inside organization of workmen which union men are accustomed to designate with greater or less scorn as "a company union." The company has never made any attempt to give the employees any degree of industrial self-government. One of the objects of this committee was apparently exactly the opposite—it was that some day employees may assume a greater or less degree of self-government, and if this company is going to be one of those which survive it must prepare the workmen

to exercise intelligently whatever degree of power they may have. It is not for the company to give power, it is for it to give the information which may save it when the workmen have power. The company is not trying to determine the form of organization under which the power may sometime be wielded. The company keeps in its employ strong, responsible, intelligent leaders of every variety of organization which is likely ever to be in control. This seems to be all that it cares to do toward securing a safe transition into any form of industrial government which may come. Which form this industrial government will take is still a question.

Many trades are to be found in the factory, most of them at least partially organized. Cleveland is one of the most highly organized cities in the country, so that although White Motor has an open shop policy, a large part of the men probably are or have been at some time members of the union of their trade. No union, however, has ever presented a demand to the company. Informal shop committees have asked for wage increases or other changes in conditions, and their requests have been listened to, but the unions have not interfered in the question of wages. Only once have they shown any great degree of activity and that was when the men got an idea that a change of management was impending. Then how can the White Motor Company get production like this on a straight hourly rate?

In the long run, according to the officials of the company, time rather than piece rates will prove to be the cheapest. It costs too much to hurry. It is more economical to employ a young man and keep him until he grows old, than to wear out a man, or lose him when he is young. They point to their average age of over thirty-five and their annual turnover of 24½ per cent in connection with their increased per capita production figures. Time and motion studies, they maintain, are almost necessarily liable to grave error. They are not elastic enough. In order to be fairly accurate they need to be taken on very hot days and comfortable days; early in the morning and just before closing time; early in the week and late in the week; during periods of political and industrial turmoil, and during periods of political and industrial calm. They vary

under conditions of domestic difficulty and domestic tranquillity. Human beings are not constant in their ability to perform. Their attainments must be measured over reasonably long periods.

Is there any other factor that can help to account for increasing per capita production on an hourly rate?

When you offer desirable conditions you get your pick of employees.

As might be expected there is never any lack of applicants for work at the White Motor. As a matter of fact, the employment department takes about one out of every thirty or forty applicants. Two conditions are required of each one who is employed; he must live in Cleveland and he must have taken out his first citizenship papers. Preference is given to married men and returned soldiers. The word "he" is used literally here. It means what it says. The company aims to pay a family wage and endeavors to employ family men. Much of the work could be performed by women, but it is the intention of the company to use only men.

There is in the White Motor plant a considerable amount of "service work." It takes the usual forms of furnishing lunch and medical aid. Then there is the consultation bureau where legal aid and other forms of advice are dispensed on company time. The company shows that this is no loss to them since it furnishes a convenient place to transact the necessary business for which employees might otherwise have to lay off during working hours. And it is on record that the men themselves once petitioned to have more men in the Industrial Service Department to answer their requests in order that they need not spend so much time away from their work.

The foremen and all executives get a special kind of service work. It is one hour a day in the gymnasium, on company time, and it is mandatory. If a foreman cannot arrange his work so as to be away from it for an hour, he is not the kind of a foreman they want. This is the White Motor course of instruction for foremen and executives—it gets them acquainted with each other undressed; it keeps them in splendid physique; and it keeps them from indigestion and getting cross and sour with their workmen; it keeps them at the top notch of initiative and pep.

The educational work does not stop with the shop. There are in addition the classes of Americanization. Suspicion need not be aroused here with regard to employers' propaganda. The man at the head of Americanization is a man of liberal thought. He attends national Socialist conferences and he is first of all a teacher and an American. He has lived in this country twenty years. There are only thirty men out of fifty-eight hundred employees who have not taken out their first papers, and that is because they intend to go back to Europe soon. The teacher in Americanization has connected up with the public schools and three hundred men are in the classes an hour a day on their own time. The company gives them fifteen minutes on company time to wash up and reach the Public School.

The cost of all this work is figured out for the men and they see that it takes eight cents a day from their possible wages. But they see that it adds much to their actual wages.

Is anything more needed to explain why they work as they do? What is back of it all? Not a strong union with power to secure for the men the benefits of increased production. Not industrial democracy. Not a premium or a bonus.

Nothing but a knowledge of all the facts which the company itself possesses; the company's verbal assurance that it will do certain things in the future; the company's reputation for keeping faith with employees in the past; for not having tried to "put anything over," and, added to this, the knowledge that the company has not weeded out of its employ all those who disagree with the present industrial system. On the contrary, it has deliberately encouraged the presence of strong and trusted leaders of the people, in whom they have confidence and on whose judgment and intentions they can rely. Real power is here—potential largely, but power which makes it possible for the men at the White Motor to accept their responsibility and satisfaction in thinking and planning for the future.

XII. LABOR'S PART IN WELFARE WORK

Many managers refuse to use the name "welfare work" for the benefit features of their plant policy because the name has become associated in the minds of workers with a patronizing form of charity. It is being called "service work" in many cases for the purpose of avoiding the offensive associations of "welfare work." Business men have countless times been disappointed because the workers showed little or no gratitude for the gifts, benefits and services bestowed upon them free of cost. The fact of the case is that what has seemed to employers to be sheer ingratitude on the part of their workers has been simply a normal human self-respect. People, whether employers or employees, resent gifts which smack of charity. There is no denying that in the past a very large part of welfare work has proceeded upon the assumption that the normal worker does not have the same self-respect which his employer prides himself upon. Not a few employers who would feel sharply insulted at the insinuation that they personally were the recipients of charity cannot understand why their workers term similar profferings "hell-fare" work. There is only one solid psychological basis for welfare work and that is a due recognition of the sentiments of self-esteem, self-respect and self-expression of men.

PSYCHOLOGICAL LIMITS TO WELFARE WORK¹

As the Commission (on adult education) phrased the problem, it is "to humanize the working of an industrial system which is based on the perfection of the machine." Obviously, yes. But how? There are two suggestions that we ought to consider before proceeding further. They are those offered by the social uplifter and the manufacturer. "Improve the living

¹ John Manning Booker. Industrial Partnership. Yale Review. January, 1920. p. 293-5.

conditions of the laborer," says the former; "and stimulate his interest in moulding these conditions." "Give him a better industrial training," says the latter; "the more he knows about his work, the better he will like it."

We can readily believe that such measures would aid in quieting industrial unrest; we cannot conceive how they would allay it. For three-quarters of a century the social uplift worker has been nobly engaged in bettering the conditions of living created by modern industry. With much to be done, he has accomplished much; but his most has failed to bring content. Even where he has secured the active cooperation of the state and the individual manufacturer and, in consequence, succeeded in attaining or approximating his ideals, he has failed, we venture to say, to bring content.

Houses designed with a view to please the workman's eye and reduce the labor of his wife—sewered, drained, centrally heated, electrically lighted, equipped with "all the modern conveniences," and with a stunted evergreen in a garden box on each side of the front door; hospitals and community nurses; schools that have theatres, refectories, gymnasiums, pictures on the walls, and even real teachers in the class rooms; libraries—open or closed shelf; parks and playgrounds with trained attendants, one to show the larger children how to use the gymnastic apparatus, another to lead the songs and dances of the middle-sized children, and a third to dust the babies; churches with every conceivable parish house activity and preachers who make using the Ten Commandments seem easy and natural—all this is paradise, but it is not content. And the real man would be just about as contented in such a community as he would be in paradise; which is to say, not much. Unless, contrary to everything we have been led to expect, he should be permitted to tumble it down and build it over again. We could get used to walking on golden pavements in no time; but it would make us extremely nervous and depressed to know they were permanently laid.

The industrial education idea appeals to us as nearer the mark; but it falls short. It benefits too few. It benefits the real craftsman—the designers among laborers. But this element has decreased in proportion to the increase of quantity output. In past times every skilled workman was a designer or an apprentice to a designer; but nowadays the only survivor of

the craftsman is literally one in a thousand. Tens of thousands engaged in making clothes for American men; and how many cutters! Industrial education is a splendid thing; but it is for the few, because under modern conditions only the few have a chance to use it.

The betterment of living conditions and the spread of industrial education, therefore, will not, in our opinion, suffice to content the workman and allay the industrial unrest.

At its present stage this discussion may be thus summed up. If the workman is to be happy in his work, his building instinct must be satisfied. This instinct, which formerly found relief in making a whole thing, has been choked by the processes of modern manufacture involved in quantity output. The machinery of modern industry has made a machine of the workman; it has brutalized him. But the industrial system is here to stay. The problem is how to humanize it. How can we change the workman's job so that while he is at it he will feel like a man building something? Like a man? Like a god. And then to find enough of such jobs. A large order—that. Profit-sharing will not fill it, or betterment of living conditions, or industrial education. We cannot see how any of these things alone will correct the existing evil, because, to our mind, none of them is aimed at the root of it, namely, the industrial system's stultification of the individual workman's building instinct.

ESSENTIAL CONDITIONS OF WELFARE WORK¹

Since Owen's time there have been many well-intentioned plans of workers, but they have not met with the success expected. The failure of Pullman, Illinois, still lingers in memory as an exhibition of what a short-sighted labor policy may result in, however kindly the spirit in which the plan is launched. In other cases, by ignoring the wishes of the workers when providing for them, considerable losses have been incurred. A widely known textile company in Rhode Island spent \$20,000 in providing a well-equipped clubhouse for its workers; but it met with little success. One of the largest corporations in this

¹ Daniel Bloomfield. *Labor Maintenance*. p. 14-22. The Ronald Press Company. New York. 1920.

country spent over a million dollars in establishing "welfare" work—but this did not prevent a very serious and costly strike.

Organized Labor Suspicious

Organized labor has been particularly hostile to welfare work as ordinarily practiced. And why? It is not that the worker is unappreciative, but that he will not be patronized. He objects to having his initiative weakened or destroyed. Furthermore, he has had bitter experience with employers who have used welfare work as a club over him, who have conducted it for advertising purposes, or who have used it as a substitute for a fair, living wage.

He has had experience with employers who boasted of their fine plan for sick benefits, when sanitary conditions in their plants were intolerable and the object of attack by the health authorities. He remembers employers who produced and distributed finely printed, expensive pamphlets describing the "welfare" work at their mines while they robbed the employee at the "company" store because no other store existed or was allowed to exist in the town. He cannot forget the employer's "model" town with its model houses from which he was evicted without a chance to find other shelter because a foreman "had it in for him" and he was discharged from the plant. He still meets friends who lost many an hour wearily waiting for frequent shortages of pay to be adjusted while the publicity representative of the company was telling of the fine things being done for the workers' welfare.

"Trade Union Views"

An unusually clear statement is found in the memorandum prepared by the Joint Committee of the Woolwich Trades and Labor Council, and the Woolwich Labor Party. This paper states that:

The following conditions are essential to any scheme of welfare supervision that is to win the full confidence and support of the workers:

1. Welfare supervision must aim primarily at promoting the welfare of the workers, and not at increasing the workers' output.

2. In the interest of welfare supervision and of the workers, duties which conflict with welfare supervision must not be included in the works of welfare supervisors.

3. Welfare schemes and supervisors must be under a democratic system of control in which the workers shall have equal participation with the employers.

4. The established field of operations of trade unions and their officials must be clearly and loyally recognized by welfare schemes and supervisors.

5. Welfare supervisors should be drawn, as far as possible, from among the workers.

6. Welfare supervisors should not be appointed without preliminary training or experience, such training to include a knowledge of trade union aims and methods.

7. The remuneration and hours of all assistants in welfare supervision work (e.g. canteen workers) must be of a trade union standard.

8. If government control of welfare supervision is maintained after the war, such control must be transferred from the Ministry of Munitions to the Ministry of Labour.

We submit further that:

9. There should be the maximum of efficient cooperation among local welfare schemes, especially with regard to small factories.

10. There should be the maximum of efficient cooperation between local welfare schemes and the municipality, especially with regard to health, housing, transit, and recreation.

11. As welfare supervision will probably become a permanent and extending element of the industrial system, there should be held in each industrial center, one or more conferences, convened by the Trade Council, or where there is also a local labour party, both bodies jointly, for the purpose of considering the aims, scope, and methods of welfare supervision; and that such local conferences should be followed by a joint conference of the Trade Union Congress and the National Labour Party.

In short, labor does not want the worker bound to his employer by any scheme no matter how great its benefits. The worker wants no "benevolent feudalism."

On the other hand, to quote the words of Bolen in *Getting a Living*, the statement cited above shows also that:

The staunchest unionists are not so unreasonable as to be hostile to the welfare institutions of the employer who asks no surrender of manly right, nor attempts to reimburse himself from wages and who, not posing as a philanthropist nor expect-

ing gratitude, treats his men well because it is the only right way—a way equally as profitable to himself as to them or to society. There need be no trouble here if the employer's designs are those of straightforward business.

In her recent book on the subject, Miss E. Dorothea Proud defines welfare work to consist "of voluntary efforts on the part of employers to improve, within the existing industrial system, the conditions of employment in their own factories." She excludes profit-sharing and co-partnership from this definition. George M. Price in *The Modern Factory*, defines welfare work as "all devices, appliances, activities, and institutions voluntarily created and maintained by employers for the purpose of improving the economic, physical, intellectual, or social conditions of the workers in their industrial establishments." With such a conception of "welfare work" organized labor has no quarrel.

SUCCESSFUL ADMINISTRATION OF WELFARE WORK ¹

It will be found that in slightly more than one-half the cases the administration of this work is by employers alone. This may give a somewhat wrong impression, since there are necessarily many firms reported which do comparatively little along these lines. The companies which do the least are those most likely to control entirely such features as they have, partly because the kinds of work first introduced are usually those which naturally remain under the immediate direction of the firm, and partly because it usually takes some experience to realize the desirability of giving the employees an active part in the conduct of the welfare activities.

It is natural that the employer should direct the work of the emergency hospital, although there are a number of cases where this has been given over to the benefit association; similarly several firms allow their employees to manage the lunch room, whether on a cooperative basis or using the profits for the benefit or athletic association. The employees quite frequently

¹Welfare Work for Employees in Industrial Establishments in the United States. United States Bureau of Labor Statistics. Bulletin. 250. p. 121-2.

have a voice in the management of the club rooms or houses, in several instances being given entire control of the clubhouse. In the matter of athletics and recreation more often the employer plays a passive part, assisting financially and providing rooms for meeting purposes, gymnasiums, and athletic fields. The work among families, except what is done in connection with the benefit association, is entirely under the direction of the companies through the medium of the welfare secretary or visiting nurse. The administration of the benefit association is in most cases either mutual or in the hands of the employees. Pensions and group insurance funds, generally being provided by the firms, are administered by them, as is much of the educational work, although frequently members of the force assist in teaching, especially in the classes in English for foreigners.

Mention must be made of one conspicuous and well-known example of cooperative management by the firm and its employees of both the business and the welfare organization. It has been the policy of this company, in increasing degree through the past quarter of a century, to give the employees a share in the management. An association of the employees is maintained, to which all of them belong. The affairs of this organization are conducted by a group elected by the employees, and this executive body has the power to make, change or amend any rule that affects the discipline or working conditions of the employees. This can be carried even over the veto of the management by a two-thirds vote of all the employees. This association is also represented by four members on the board of eleven directors of the corporation. All the parts of the welfare organization have been carefully built up and are controlled and managed by the council of the association through committees. The firm contributes club and business rooms, certain salaries, and any other assistance necessary. The fundamental principle followed by the club in the management, however, is that these activities shall be in the main self-supporting and that financial or other assistance rendered by the firm shall receive a direct return from the employees in increased efficiency. There is no doubt that in this particular instance the generous and broad-minded policy of the firm is reflected in the very unusual personal interest in the business which is evidenced by the employees as a whole.

XIII. THE MIND OF THE ALIEN AND AMERICANIZATION

The chief factor left out of account in a great deal of Americanization work is *the mind* of the alien. The assumption has been that a certain amount of moral preaching on the duty of the immigrant to appreciate what America has done for him, a certain amount of night school teaching of the English language, and a certain amount of information about the history and life of America would create a new loyalty and a new mental outlook. This assumption leaves out of account the fundamental influences upon the psychological structure of the alien. It grossly underestimates the grip of the cultural background of the alien's previous life upon his present thoughts and emotions. It decidedly overestimates in any number of cases the benefits for which the alien ought to feel grateful. Working conditions, through the effect of low wages on the possessive instincts and the parental instincts, through the effect of long hours and of fatigue and monotony upon the nervous organism, through the effect of industry upon the creative and self-assertive impulses of the worker, are building hour by hour into the worker's life his basic loyalties, gratitudes, and satisfactions. If working conditions are sound, the foundation of Americanization is secure. Propaganda, language teaching, instruction in history, and the like, are at best a superstructure. They cannot shake the fundamental loyalties of the worker as they are fashioned in the thousand experiences of the alien's daily life. When both approaches are made, Americanization is a natural, spontaneous outcome. Americanization is a thing that cannot be forced; it must grow from within as a feeling and a mental outlook. Americanization should establish itself psychologically by recognizing first and last the *mind of the alien*.

THE DISTINCT PSYCHOLOGICAL BACKGROUND OF THE ALIEN¹

If assimilation is the establishment of an identity of interest expressed through common reactions to American thought and life, through a unity of public opinion, and through a common belief in American government and institutions, what then are the principles which native and foreign born alike can understand and apply in the every day affairs of life?

Recognition is the first of these principles—recognition by the American of the capacities, qualities, and contributions which the immigrants bring; and by the immigrant of the ideals and achievements of Americans. Americans, hitherto, have been inclined to "lump their appreciation" of what the various races have brought to America. They judge racial traits largely by direct and indirect contact with individual members or with isolated groups of the various races, and not by a knowledge of the history and culture of the races as a whole, of which the individual is but the product. But recently a systematic effort has been made, notably by the Literary Digest and other magazines, to bring before the American people the characteristics and achievements of the various races. This new interest on the part of America toward racial information has been one of the contributions which the war has stimulated.

But the application of this racial information to practical affairs is hardly begun. For instance, Americans regard quite differently the Italian in America who is doing rough labor, than they do the Italian in his native environment; and they seem to see little connection between the ditch digger and the literature and art of his race. Also, it scarcely occurs to us that there is reason for a joint celebration on Columbus Day by native Americans and foreign born Italians, and only recently have we begun to recognize their national holidays. By such lack of appreciation we have failed to convey to the members of almost every race whatever concept we may have had of their racial accomplishments.

This apparent unwillingness or inability of the Americans to connect in their own minds the immigrant with his heritage,

¹ From *Immigration and the Future*. By Frances Kellor. p. 250-64. Copyright 1921. George H. Doran Company, Publishers.

has caused us to pay but little attention to the individual. On the one hand he has been admitted to the country, which in itself may be taken as a recognition, either of his desirability or of his labor. American citizenship has been offered to him—a decided recognition that he could appreciate a free government. American schools have been opened to him,—a recognition of his desire to learn our language and history. An earnest effort was made to Americanize him—a recognition, from one point of view of his worthiness, or from another point of view of its necessity to America. Coincident with the war there has also been established a number of joint societies—a recognition of the desirability of bringing the various races and native Americans together. Increasing attention has also been given to the holdings of exhibitions of the arts and crafts of the races—a recognition of the cultural contribution which the immigrants have made to America.

But what of the day's work—the place and time where most theories are tested and where most ambitions are realized? Here the tendency has been to limit our recognition of the immigrant to his value as a laborer. As a result, discriminations in employment, in promotions, in treatment and in living conditions have, to a considerable extent, usurped the place of recognition. This limitation of recognition to labor values explains, in a large measure, our inability to absorb or to incorporate other racial values into the native American system. This has resulted in a loss to American business, as a few observations will show.

Deterioration in workmanship, no less than low production, is creating anxiety among American manufacturers; not only because of the increased cost but because of its possible effect upon international markets. A considerable part of this deterioration is due unquestionably to the loss of immigrants and to our past neglect to conserve the quality of workmanship of immigrants. It is also due to our failure to note the varying qualities in different races,—qualities which best fit them for American industry, by giving the highest return in the quality and quantity of production. What are some of these qualities that deserve recognition?

First, the immigrants of the majority of the races which supply America with unskilled labor have a capacity for faithful operation and a natural instinct for perfection. As part of

the craft training of the old world they take pride in their work, and their desire for perfection yields more slowly to the insistent pressure for quantity. Second, they have a definite "work sense," which they do not constantly seek to evade. Third, they possess a better discipline in working together. Fourth, the peasant has the patience to do the drudgery incident to monotonous work and the endurance to stand its strain. Fifth, they have a sense of frugality which eliminates waste in plant operations. Sixth, they have a capacity for self-discipline and for working together within the narrow confines of mechanical work, an asset to which Americans have given little thought.

The American producer who must compete in the markets of the world, including America, with the products which these races will make in their native lands, may well consider whether the encouragement of immigration of races possessing these qualities in a high degree is not a matter of considerable importance to American commerce. When competition with the frugal peoples of Europe, with their lower cost of production and higher quality of output, begins to make itself felt throughout the world, American employers may realize, when it is too late, the importance of knowing how to reach, at its source, the labor supply of the races which will ultimately produce the most of the best qualities at the least cost.

The steady capability of the immigrant workman and his resistance to change are of considerable importance in production. These qualities could be utilized to a greater extent if the employer understood his racial workmen. Before the war the average employer was skeptical if he was told that his racial workman required a special recognition. Today many plants have a different atmosphere due to an increasing recognition of the immigrant. As an illustration, in a certain plant where more than a thousand Italians were employed, a condition prevailed which showed a lack of harmony between management and men. The management complained that the immigrant workmen did not appreciate the lunch room; and that they would not learn English, even though the classes were conducted on part company time. The men were suspicious of every advance and innovation. It was suggested to the management that it show some simple form of recognition, such as an appreciation of what the Italian national holiday meant to the workmen. On that day every member of the management

appeared wearing a red carnation. The Italian workmen understood the act of appreciation and, from that simple beginning, there has grown an intelligent and sympathetic method of dealing with racial workmen.

Another quality, the value of which business has failed to recognize, is the frugality which most immigrants practice. The peasant, trained in a hard school of privation and want, is not prone to waste even when he acquires plenty in America.

In a country where the business mind tends to act without mature deliberation, the immigrant's instinct for definition may be utilized if put into play in operations where it will count for the most. Where the American business mind is only too ready to accept new propositions, the immigrant's greater power of refusal may furnish a much needed check to hasty action and may prevent the adoption of wasteful and half-baked experiments. His natural tendency to preserve traditions creates a center, however ill adapted and uninformed it may be as to American conditions, to which appeals on labor and other controversial matters can be referred for judgment.

Vast as the wealth of America is today, it furnishes no excuse for the neglect of small assets, one of which is the thrift of the immigrant. His tendency to hoard his savings and to withdraw them from circulation and thus destroy their immediate usefulness for capitalization purposes and also their earning power to himself, has not been recognized by the American.

If such qualities are among the resources of immigrants, which are largely unused by American business, it is also true that some races bring to America certain qualities which make their incorporation into American institutions difficult, and it is equally important to gauge their effect upon business.

The immigrant peasant moves slowly away from the beliefs, traditions and habits of his native land, and scarcely at all, unless he has the approval of some recognized authority. The processes of his mind are simple. His reactions to the complex American city are governed by a tenacity of early ideas and training, and by a routine existence which is appallingly narrow. His absorption in the day's work, with the ever present anxieties of food, shelter, and clothing, shuts him out from much of the new world about him. He is often filled with a deep-seated rancor, which is based on centuries of oppression and race feuds

which cause him to respond in most unexpected ways to overtures from the American. He has a credulity growing out of an unbridled imagination which prevents him from readily perceiving abstract rights. His limitations in comprehending public events in a strange country create barriers through which few Americans have yet found the way. His untrained mind, unaccustomed to reflection and with few resources to fall back upon to tide it over the break with the home country, requires that the simple ties of religion and of physical restraints be established immediately upon arrival. In the absence of these, the immigrant does not respond during crises in a way wholly understandable to the American; and indicates a slower adaptation to American business operation and life which should be reckoned with in all industrial management experiments.

But if the American has failed in his recognition of the immigrant's qualities and possible contributions to America, the immigrant has no less failed to recognize the finer traits of the American and to appreciate American achievement. He has come to know the dollar far better than he has the man. He has come to judge of American institutions, not by their illimitable possibilities but by the pettiness of his narrow experiences. He has been contemptuous of the literature of a country which he thinks is without the richer traditions and simplicity of his older world. He has by comparison not only disparaged much that the new country has to offer, but he has acquired sometimes a supercilious and even critical attitude concerning much which, not having had a hand in the building, he does not yet fully understand. He has often mistaken liberty for license and duties for privileges.

Abstract recognition of the qualities of races and of personality of their members will not do much for assimilation, unless a way can be found to make recognition not only apparent but mutual by effecting an exchange of ideas and ideals between the various races and between them and the native born. Thus reciprocity becomes the second principle of assimilation. Much is now being done to acquaint Americans with a knowledge of the history and an interpretation of the races, many of whose members are now in America. But as yet we have done little with our interracial problems of bringing, for instance, the ideas and ideals of the races together; or of bringing about an exchange of literature and opinion and of combining them with American thought and expression.

This is essential if we are to apply the third principle of participation which will put into operation recognition and reciprocity between races and between them and Americans. For only through the full participation of each immigrant in American affairs will economic assimilation obtain. It is by drawing out the full contribution which immigrants can make and by utilizing their full powers, that identity of interest is finally established. This means giving to them the full opportunity to put into practice their ideals of freedom as well as their capacity for work. This means the elimination of discriminations, of a sense of race superiority, of imposition of regulations without consultation, and of many similar attitudes of mind which now limit the immigrants' participation in American affairs and which now turn their attention to institutions and countries where they can find a fuller expression.

Economic assimilation of immigration, then, is the application of the principles of recognition, reciprocity, and participation by native and foreign born in the day's work. It has for its objective the irrevocable integration of the immigrant into American life at every economic point.

NEW OPPRESSIONS FOR OLD¹

In America we have inherited all the oppression problems of Europe and out of them we are trying to build up a cooperating democracy in which men may rise to their full human dignity.

One-tenth of our population is Negro with its actual or potential psychoses, and approximately one-third of the remainder is either foreign born or of foreign-born stock. Counting the Irish, it is no exaggeration to say that there are in the United States more than twenty million people who are more or less psychopathic on account of one or all forms of oppression previously or at present experienced in Europe.

The problem of merging these peoples of varying backgrounds and intense attitudes ought not to be, and cannot be, the method of the melting-pot which aims to make a uniform society. It can be solved only by the paradoxical method of indirection. Central Europe has proved conclusively that lan-

¹ Herbert Adolphus Miller. *The Oppression Psychosis and the Immigrant*. *Annals of the American Academy*. January, 1921. p. 137-44.

guage cannot be assimilated by attacking it directly. In my opinion more progress would have been made in "Americanization" if no one had ever thought of it, although that does not mean that it is not an advantage to promote humane relationships. What should be meant by Americanization is the bringing of all the people of America into participation in a progressive democracy, with tolerance toward the varying customs and beliefs, so as to articulate a society rich in content and orderly in process.

America to the immigrant is an opportunity in those directions in which he has previously been oppressed. The great danger is that similar forms of oppression may be found here. He brings a complex of attitudes and he needs a proper meeting of those attitudes. What he can give us most definitely is an object lesson in political science. If we heed it we may almost reform the world; if we ignore it we shall help to perpetuate what the war sought to banish from the earth.

But the teaching of English should be called education, not Americanization, which is likely to offend because it implies the same old culture domination which is more hateful than political domination. We should foster the self-respect of the immigrant by respecting the language for whose very existence his people have struggled for centuries. As Chicago and Milwaukee have already done, we should offer in the high schools courses in any foreign language for which there are children demanding it in numbers sufficient to form a class. We could thus preserve the language possession already attained by the children, and also promote respect in the children for their parents; and in the parents we should be dislodging the suspicion that America practices the hated policy of Europe. There is no other way comparable with this for making English respected and loved, for it will thus stand out as a medium of opportunity and not as an instrument of annihilation.

In the same way the foreign born need their press. They need it because there is no way in which they can learn the news of the world and the facts and purposes of American life. Even if they learn English they will not be able to get its spirit as they still live in that of their native tongue. How many of us who have studied French and German much more than the average immigrant will ever be able to study English would choose a French or German newspaper in preference to an English one?

We must accept at their face value, and with infinite patience, both the normal and the pathological attitudes. The foreign born will never forget the land of their origin and their responsibility for it so long as injustice prevails there; the identification of America with the problems of Europe, therefore, is so close that we can not escape our share in the responsibility however much we may wish. There can be no real Americanization of the immigrant unless there is a real league of nations, as the symbol of a real organization which will substitute in Europe a reign of justice for the reign of immortality. The isolation of America is pure illusion. The only way it can be regained is by identifying ourselves with a democratic reorganization of Europe. If an unjust domination is imposed on Germany, the many millions of German stock in America will gradually and inevitably develop a political solidarity such as they never knew before.

Most of the nations of Europe have only one or two international problems, but we have every one of the problems of all the nations within our borders. To deny or overlook this is to pull down over our own heads the pillars upon which rest our political and social structures. No country in Europe is so dependent on just relationships as is the United States. Fifty per cent of the Irish, twenty per cent of the Poles, and a large percentage of all the other long-oppressed peoples are in America and constitute from one-third to two-thirds of the population of many of our leading centers.

The foreign born need a renewal of the faith that has been waning in the freedom and democracy of America—to obtain which they came to these shores. Through what those who came here told their oppressed kinsmen in Europe, the latter came to look to America for salvation, and through them the real purpose of America may still be the salvation of Europe. To discriminate against those who are living among us means a perpetuation in America of the hatreds of the past in Europe. We must devise a political science and social practice which will give them the self-expression here that self-determination aims to give in Europe.

Just as finally the American authorities tried to mobilize the attitudes of the immigrants for purposes of war, so they must mobilize them for peace. Foolish and frantic methods of Americanization should yield to the realization that we are dealing with a psychological and moral problem, and that a

league of nations is potential in the United States. If we could organize the representatives of the countries of Europe who are in America behind a program for a reconstructed world, we should have an instrument for world-order whose potentiality can not be measured. Instead, we hide our heads in the sand and think to make them forget by teaching them English!

There is no panacea for dealing with the immigrant simpler than that required for the whole world. And the existing deep-seated psychoses can only be cured through a long process of time. We must deal as wise physicians with a soul-sick people for whose trouble we have no responsibility but who have become an integral part of our lives.

ADAPTATION OF AMERICANIZATION TO THE ALIEN'S MAKE-UP¹

The night school is praiseworthy, but does not give the immigrant a fair chance to learn. After a man has labored for ten hours at monotonous, tiresome work, the fatigue toxins have dulled the brain. Only the exceptional individuals among the unskilled men have enough initiative left to attend school at night. Further, the night school method gives an outsider the impression that the physical work, that the unskilled immigrant can do, is the thing that is of paramount importance. It appears as though we consider his mental and spiritual development secondary. If the choice had to be made between giving the illiterate foreigner the poorest or the best hour of the day to secure his training in citizenship, the best hour should be his, not only for his sake but for ours as well. In order that all the workers may be reached, it will be necessary for the school to go to the factory. According to this method, the alien is given a half hour or an hour per day without wage-reduction, whereby under the direction of public school teachers who go to the shops, he may pursue the study of English and of citizenship. The public school system furnishes the teachers and the equipment; and the employers, the space, artificial light,

¹ Emory S. Bogardus. *Essentials of Americanization*. . p. 223-5. The Foreign-Born. University of Southern California Press. Los Angeles. 1919.

their cooperative interest, and perhaps one-half hour of the time of the men without wage-reduction. Employers are learning that such welfare work is economically profitable.

The forces of religious education must greatly increase their efforts, or else hundreds of thousands of immigrants will lose their religious faiths and beliefs. If religion is a vital force in human life, as is generally believed, then the public educational forces must face squarely the problem and introduce adequate training in the fundamentals of religion in the public school system.

The teaching of English, of civics, and of American ideals must be made so worth-while and attractive that all immigrants will desire to avail themselves of these opportunities. Employers must feel their responsibilities in regard to increasing the industrial efficiency and civic earnestness of their immigrant employees to the extent that they (the employers) will give at least a portion of the day's time on pay so that the foreign-born adult may have a fair chance to learn the rudimentary principles of Americanism. The public must see the need of giving the honest but unlearned immigrant a cordial handshake, sympathetic glances of the eye, and full opportunities for a self-expression that is in harmony with the best American principles.

If we protect the immigrant from exploitation and insist on better standards of living, of sanitation, of recreation, of education for him, he will almost automatically become a good American. If we give him a cordial welcome, a practical fraternalism, and democratic opportunities in our every-day life, he will gladly give his all to America. As a class, the immigrants are teachable and patriotic. Often they appreciate better than we the meaning of freedom. When they fairly understand Americanism, they are quick to repudiate autocracy and to push forward the cause of democracy.

FUTILE DEVICES VERSUS FUNDAMENTAL SOCIAL CONTACTS¹

To many interested in Americanization, the social and political assimilation of the immigrant appears as a process of

¹ Carol Aronovici. *Americanization*. p. 35-6. Keller Publishing Company. St. Paul, Minn. 1919.

education. Teach the foreigner the English language, educate him about American standards, inform him about American political institutions, impress him with the opportunities afforded to him by the United States, preach to him about the moral codes of the American people, make him feel his responsibility toward America, these are the ways and means by which we expect to achieve the task that is before us.

While no one would venture to discount the value of the educational processes outlined above, they imply a thoroughly developed educational system, leisure time during which this educational program can be carried out and a mental and physical receptivity in the immigrant attained through a favorable economic and social environment.

To assume that education without adequate control of environment will accomplish the assimilation of the immigrant groups is to fail to realize the value of direct, personal contact as against bookish and oratorical forcible feeding.

With housing conditions unsuited for the attainment of the American ideal of home life; with low wages, irregularity of employment, bad working conditions, absence of adequate insurance against sickness, death, accident, and unemployment; with an enforced sectionalism prompted by national and racial discrimination and the constant and entirely too obvious effort to Americanize consciously or unconsciously, prompted by a sense of fear or a sense of superiority on the part of the native elements, we cannot expect a sudden change of mind in the immigrant without reservation and with full confidence in the honesty of purpose of those most active in Americanization work.

The social agencies which have fought against child labor, which have made every effort to improve living conditions, the organizations interested in the promotion of social insurance, and all the other societies, organizations, and agencies working toward the improvement of living conditions in this country, have done more in the past and will continue in the future to do more toward the Americanization of the immigrant than all the Americanization leagues, societies, committees, commissions, boards, etc., could do under the most favorable circumstances. Americanization without social amelioration is futile; assimilation without friendly social service is inconceivable

SOUND INDUSTRIAL ENVIRONMENT THE VITAL AMERICANIZING INFLUENCE ¹

After all, we really cannot Americanize the alien; he must do that for himself. It is for us to show the way; and as Americanization requires an atmosphere of mutual confidence, it is absolutely essential to win the good-will of those whom we would influence. We must look for the best methods, and try to sum up in a practical way just what is and what is not desirable.

The Importance of First Impressions

When the immigrant comes to this country, he brings with him the desire to enjoy the freedom and reputed good-will of America. Whatever his nationality, the lonesome stranger is ready to respond to the least sign of cordiality and consideration. Sympathetic assistance in learning the habits, customs, and traditions of the new country will bring out the best in him. If he is to become an integral part of our industrial structure he must not be treated as an interloper, but as a friend. He must find it worth while to make this country his permanent home and in doing so must understand our ideals and see the relationship of our industrial and political organization to his own job and his personal welfare.

These facts are appreciated and utilized by such concerns as the Schwartzenbach-Huber Company which is carrying on an Americanization campaign in its New England plants as a part of the campaign for labor maintenance. The company believes that more can be done to establish the right spirit at the time when the foreign-born worker receives his first impressions than later when his opinions have been formed. Its policy, therefore, is to treat the newcomer with the courtesy and consideration with which an American would desire to be treated in a strange country, and American employees of the plant are encouraged to make their foreign co-workers feel at home.

¹ Daniel Bloomfield. *Labor Maintenance*. p. 125-31. The Ronald Press Company. New York. 1920.

Managerial Attitude—A Determining Factor

The real work of industrial Americanization begins with employers, foremen, and bosses, for their attitude is the determining factor in the success of any Americanization plan. To the foreigner, they are the persons who represent this country and American ideals. These men must get away from the notion that foreign-born workers are merely "wops," "mutts," and men without intelligence. A manager of a large industry in speaking of his foreign employees to the author called them "animals who want nothing but money," and another, expressing his labor needs, exclaimed, "We want men who don't use their brains; we want foreigners!" How little did these men know of the forces at work among these "foreigners" to capitalize their man-power and help "show the bosses that we are human beings and intend to take the control of industry away from the slave-drivers!". . .

The Americanization Committee

Like other service work, Americanization depends for its success upon the full cooperation of all the parties in the industrial enterprise. The alien should be given a place in the councils dealing with this type of plant activity. One of the best methods of handling this work is through a committee of workers and representatives of the management, which should, if possible, represent every nationality in the plant. We are always in danger of overlooking human distinctions of importance when we generalize about people in a wholesome way. All aliens are not alike, though some of their problems may be; nor all nationalities in daily contact likely to conform to the rough classifications we may use concerning them. The Americanization Committee of the United States Rubber Company plant at Naugatuck, Connecticut, is composed of two men selected from each racial group. They have done a good deal to stimulate activity among foreign-born workers.

The committee, thus constituted, should hold meetings often to discuss plans and procedure. Such representation will go a long distance to bridge the gap between the management and the new Americans. They will receive this attention as a sign of respect and consideration, and their appreciation will take the practical form of helping to keep up attendance, interest, and loyalty for the project. Moreover they will now and again offer hints and counsel of utmost practical usefulness.

Where the above suggested method has been tried, an enthusiasm has been developed which compensates the management many times over. In New Britain, Connecticut, for example, a number of the factories are cooperating in this work, and have committees some of whose functions are:

1. To assist all employees in acquiring the English language.
2. To distribute advertising leaflets and posters in order to stimulate evening school attendance.
3. To plan for special recognition of those who attend evening classes, and to encourage absent students to return.
4. To promote citizenship interest among employees.
5. To enlist foremen's interest and to help them develop a more thoughtful and sympathetic attitude.
6. To provide opportunities for social contact, through such activities as community singing and so on.

The Influence of Plant Spirit

The best and most lasting achievements in Americanization work have resulted from indirect, rather than direct influences. If the spirit and surroundings of the plant definitely suggest Americanism, a large part of the work has been accomplished, and a fertile soil for further successful work has been prepared. Posters, flags, first-rate and cleanly surroundings, produce an atmosphere distinctive of American work places. This environment is in sharp contrast to that which many an alien has been accustomed to abroad. As the proper atmosphere has a direct bearing on the success of any Americanization plan, every executive, every foreman, and every employee must be impressed with the matter of maintaining American standards with regard to the immediate surroundings of shop, mine, and mill. This requires attention to detail, but the effort will bring better discipline, and greater care of tools and other property. Right plant relationships and an interest in the constructive educational work of the organization will also be manifest.

Getting Behind the Returns

A point to be borne in mind, however, in checking up Americanization projects is the inadequacy of routine statistics, necessary though they may be. Figures can never tell us how the people influenced by various projects really have been affected. There has been a tendency to make much of classroom records. It is important to go behind the returns. To accomplish this,

a closer contact with the groups being Americanized is required than is always found. These groups have something to say, if wise methods are used in getting at their ideas. At times, they are treated in too mechanical a fashion, and much helpful counsel is lost, which if gathered in time would do much to help improve the work. Every graduated group should be treated as an alumni group whose interest in the future good of the service that has helped them is expected for the sake of others who come after them. There is cumulative good-will in such a treatment of the groups, and the assurance of continued improvement and larger effectiveness of the whole enterprise.

A California Commission

A few years ago the state of California established a commission on housing and immigration. This commission has been a great success because from the very outset its members sought to see the immigrant problem not only from their own standpoint, but from that of the immigrant. They believed in him; they felt and showed their respect for his customs and his traditions. Nothing they ever said caused any loss of self-esteem on the part of those they sought to help. By building on the loyalties that were natural to the alien they placed the new loyalties they sought to instil on a much stronger foundation.

The new environment of the alien was a matter of large concern to the commission. Was the local environment, they inquired, such as helped or retarded real Americanization? Were influences at work on the alien which, unless checked, would embitter his spirit and develop in him a hostile attitude toward the new land? In other words, those practical Californians threw mouth-filling phrases aside and faced the facts squarely. They saw that poor housing was an enemy of Americanization; that abuses and oppressions of various kinds suffered by the alien at the hands of both his own more sophisticated countrymen and those who called themselves Americans were doing more than anything else to alienate and prejudice him. These things had to be dealt with in a sensible manner if Americanization could make any headway at all.

XIV. FACTORS IN INDUSTRIAL EDUCATION

THE NEED FOR POLICIES OF INDUSTRIAL EDUCATION ¹

The business of the vocational teacher is to make industry interesting. Very few laborers can reach the top. On this account some people despair of ever making work interesting. They feel that, since the workers are compelled to settle down in grooves, industry can have no meaning or incentive for them. If this conclusion is true, then the situation is hopeless. For, as far as we can see, the forces of steam, electricity, transportation, are driving industry into large concerns. Twenty thousand men in one factory can make automobiles cheaper than one thousand. Room at the top is lessening and the number of workers tied into grooves is increasing.

The outlook is menacing for the worker, for industry, for the nation. The workers lose their interest in industry just at the time when they become more powerful than ever before in controlling industry through labor organization or politics. Without interest in their work they cannot be expected to pay attention or have any care for the economy, efficiency, or discipline, without which business goes bankrupt.

The inventors, the engineers, the business men, have brought on this situation. They have mastered the forces of nature and will increase their mastery. They have converted nature into capital and labor into an army. The problem of capital is the physical sciences—chemistry, electricity, physics, biology. [The problem of labor is the human science, psychology.] If it is the engineer who is the expert in physical science, it is the educator who becomes expert in psychology. [The future of industry is psychological.] The inventors, engineers, business men of the

¹ John R. Commons. *Industrial Good-will*. p. 139-42. McGraw Hill Book Company. New York. 1910.

future will be industrial psychologists. [Industry must be educational, and it is this very problem of opening up lines of promotion where physical science has closed them that is the problem of industrial education.]

For interest in one's work does not depend on a remote expectation of reaching the top. It is the next step that is interesting. The next step means accomplishment, means overcoming obstacles that are not hopeless, means initiative, means thinking on the job. To the mere "intellectual" who ponders over the labor problem, there is no hope if there is no room at the top. Hence efforts to interest workers even in the next step are despaired of. To the business man and the engineer whose opinions are formed in mastering the physical sciences, the worker is often preferred who does not think or talk back. But to the educator it is these very qualities which others reject that are his problem to be worked out. They are the psychological problems of industry. If industry has lessened the chances of promotion it is the educator's business to open them up again. He must work out lines of advancement that may serve as a substitute, at least, for the lost chances of promotion. He must know how to suggest these lines of advancement to the employer and the worker and to work them out practically. If he sees workers confined to "enervating" jobs he must know how to get them "energized." And, just as the business man has employed and made use in the past of the inventor or engineer who reduces the physical sciences to practice, so must he enlist the inventive educator in making his business educational.

Then may we expect that industrial education will take its proper place. Schools and industry will dove-tail. Neither employer, laborer, nor educator will dominate. The educator will come out from his seclusion and will become industrial without being commercialized, for he will bring to industry the science of psychology. Business will become educational without being academic, for it will have its daily problems of education which cannot wait for a remote future. And labor will become more generally interested in the work, in addition to the compensation.

PROCESSES OF TRAINING¹

Having the training program under organized direction and control the spoiled work so common with new help drops to a remarkably low level, and the instruction being in accordance with factory requirements, production returns started with the first day of training.

Many manufacturers have remarked concerning the noticeable effect of training upon the contentment of their workers and the corresponding decrease in labor turnover. They have suggested that previous to this, much of their turnover was due to the fact that many employees went on the job not only incompetent, but also not well advised concerning either it or their relations to the factory. This lack of understanding breeds discontent and the consequent shifting to other jobs.

In factories where few new employees were hired the training department afforded an excellent medium for improving those men and women who were below standard, either in the quality or the quantity of their production. When the older employees concerned appreciated the significance of this there was usually a scramble to grasp the opportunity.

Several plants even required that their inspectors also be sent to the training room to make under instruction the parts they were daily inspecting. The decrease in "come backs" from their inspection following such a "recess" was noticed almost immediately.

In a large manufacturing establishment the salesmen who had been called in for their regular spring meeting received several day's instruction in making the product they were representing while on the road.

Many factories have found the training room of great assistance to their planning departments. New tools and methods have been tried out to advantage before introducing them on the factory floor thus not interfering with the production schedules or causing other embarrassment. In some places the training room has even been called "the laboratory or the planning room."

¹James F. Johnson. Possibilities in Training Factory Help. Industrial Management. September, 1919. p. 221-4.

While it was not a difficult matter to sell manufacturers on this method of training still there were a few who inquired as to "the cost of the thing" more particularly than they did its benefits.

Conditions for Good Training

For a real training proposition, the separate training room has proven most successful. Good teaching necessitates a certain amount of privacy and it must be free from distracting influence. Besides this, the separate training room affords a constant supply of trained workers, and does not interfere with the factory schedules as does training upon the floor. It is far better suited for upgrading employees below standard, as well as better suited for investigation work of the planning department. From an economical standpoint there can be little question. The many records showing that separate training departments pay for themselves are sufficient proof of this.

In most cases it was found that the results obtained depended primarily upon how the instruction was given. It required a carefully worked out policy with well planned methods of instruction and supervision, where the instruction itself was given upon regular shop equipment and the learners were required to make the factory product, or its parts, under the direction of a capable instructor, and up to the same standards and requirements as would be demanded of them when transferred to the factory proper. This furnished ideal teaching conditions, but necessitated that it be in the hands of a thoroughly capable director. Men expert in their trades did not always make good instructors, let alone directors. The teaching field was new to most tradesmen and in many instances it was necessary to give these men special training in their new job. They took to it well, and it was found that better success was obtained with these men than with men originally trained as teachers but who needed special assistance in the trade work.

Spirit of Self-Expression

✓
✕ Training recognizes the latent qualities in men, also their desire for self-expression. Workmen the world over crave an opportunity to "get somewhere." When this quality is properly directed a fine type of employee is sure to result. Statistics show that help trained in this manner are quite contented and the labor turnover among them is remarkably low.

As a means of improving the ability of workmen who are below standard, yet not quite bad enough to fire, the training room has many times proven itself most valuable. Special instruction given to this class of workmen has often increased their production seventy-five per cent with a corresponding decrease in their spoiled work. These men seem to take a new lease on life, and the reaction upon their fellow employees is beneficial.

The privilege that is offered is eagerly accepted and the men show their appreciation in their daily work.

Very few workmen look for charities from their employers. They feel that they have ability to sell and are anxious to dispose of it to advantage. It is true that whether or not this ability is fully developed, is not always considered. Yet the fact remains, nevertheless, and it is that which should be considered. To sort these men according to their abilities, or to develop these abilities in others is the manufacturer's choice.

The process is highly desirable as well as profitable for both parties. But aside from this is not such procedure quite in line with the true meaning of what we hear concerning the recognition of the great human element in labor? Those manufacturers who have training departments feel it is.

FUNDAMENTALS OF TRAINING¹

The experience of the Recording and Computing Machines Company of Dayton, Ohio, affords a good example of the way in which vestibule schools were established during the war as well as an excellent statement of some of the fundamental principles involved in their management. This factory employed in 1918 about eight thousand six hundred people, of whom five thousand were women. Many of the operatives were engaged in manufacturing Russian combination time fuses, the work being done in aluminum, brass, and various other metals, and requiring accurate machining and close measurements. Manufacturing limits ran as low as five thousandths of an inch in metals quite difficult to work.

¹ Roy W. Kelley. *Training Industrial Workers*. p. 154-9, 163-5. The Ronald Press Company. New York. 1920.

Meeting a Skilled Labor Shortage

The supply of labor in Dayton in 1917 seemed inadequate to meet either existing or future demands. Men were scarce and the few who were available were either in clerical occupations or belonged to trades not at all allied to the mechanical work the plant had to offer, such as brick laying, structural steel working and masonry. The men engaged in these trades, intelligent and accustomed to high wages, were naturally unwilling to accept other war work at laborer's pay, and yet were unable to bridge the gap caused by their ignorance of mechanical methods. It was the function of the new vestibule school to train these men and at the same time to make use of the large number of women who were eager to do their part in winning the war.

Forming a Training Department

The training department was located in a well-lighted room entirely separate from the factory. In it were placed all of the different types of machines upon which training was considered necessary, such as hand-turret screw machines, automatic screw machines, thread millers, drill presses, and special machinery designed and built by the company. In addition there were the necessary benches and fixtures for teaching inspection and assembly. The employment department was charged with the selection of employees, and when students had finished their training in the school, requisitions were filled for the factory departments through the same office. The foremen were never permitted to employ people nor were they allowed the right of discharge without the sanction of the employment department.

Selecting Instructors

For the head of the training school a workman was selected who was an expert mechanic and operator, but the teachers in charge of female learners were all women. Each teacher handled from three to five girls at a time, the number depending upon the nature of the work. Every student went through a preliminary study of the character of the metal being used, the nature and functions of the tools she was expected to handle, and the method of operating the machine. When the new employee started the work for herself, she was carefully super-

vised, her errors were corrected in a kindly manner, and every encouragement was given to help her to make as rapid progress as possible.

Confidence Inspired

Before the training department was started it was noticed that many new girls upon coming into the shop were extremely nervous. They would often break down and wish to leave the shop at once because of the fear of the large machine tools which appeared to them so dangerous and complicated. Their natural fear of the shop was multiplied by the fact that they were expected to begin their work in the midst of the rush and roar of the factory. In a separate shop under women teachers, confidence was gained at once. It was only natural for beginners to feel that if other women could accomplish the work without danger that they too could learn it rapidly.

Purpose Limited

No effort was made to train for more than one particular job. The training was not advertised as general mechanical education, but every pupil understood that she was being taught in a very short period and that if she came to have any mechanical skill it would have to be acquired through her work in the shop. In less than ten days the girls were trained to operate hand-turret lathes on work requiring a high degree of precision, and it is claimed by the company that these girls when entering the shop attacked the work on their machines with vigor and confidence. In less than three weeks they reached a high average of production and began to earn the bonuses distributed under a graduated system of pay.

Continuation Training

The training of the vestibule school was continued in the factory by carefully selected men known as "job bosses." Each of these supervisors had under his control only a small group of persons, the number ranging from seven to thirty according to the difficulty of the operation. The pay of the job boss depended in part upon the average bonus of all the operatives, and these men were carefully supervised to make sure that they understood the losses to the company which might be caused by injuring the health or welfare of those under their care.

Results Achieved

The following statements made in Industrial Management, May, 1918, by C. U. Carpenter of the Recording and Computing Machines Company indicate some of the results achieved after only a few months' experience with the training department:

We have a large assembly department, employing over two thousand girls. Two sets of prominent engineers who investigated the possibilities of production from this plant reported that the best output possible from this assembly division was fifteen thousand complete fuses per day in two shifts. By thoroughly training the girls we have been able to reach an average production of thirty-eight thousand per day in one shift.

In addition to the fuse work, our company is building optical instruments of a character that requires the greatest precision, much of the work being held within limits of twenty-five hundred thousandths of an inch. This work requires not only close manufacturing, but also most careful work in lens-making and grinding.

Before beginning this work, the organization made a minute survey of each operation, no matter how small, involved in the production of these instruments. This included all the manufacturing, assembly and lens-grinding work. This company was compelled to build its own lens-grinding machinery, as none could be purchased in this country. When we finished this survey, we had before us a description of exactly what was required on each operation. There was necessarily much work that was entirely new to us, as well as to other American manufacturers, owing to the lack of experience in this work in the United States.

It is interesting to note that we were advised that it would be impossible for us to get any high-grade lens-grinders in the United States, and many dire prophecies were made as to our probable failure. However, we started the training school in the grinding of lenses, and have developed a high-grade body of lens-grinders, both men and women, within the past six weeks.

We produce our base forgings of aluminum on hand-turret screw machines. On this particular forging there are fifty-six gauging points, with allowable limits on different operations ranging from five hundred thousandths of an inch to two thou-

sanths of an inch. In January, 1916, the average production of thirty-one women employees was eight pieces per hour. While the operatives were apparently busy at this rate of production, my experiments showed that there should be produced from those machines as a fair production an average of thirty-five pieces per hour. We put our old operatives into the training department, and within four weeks after the new and old operatives had been through this training department, the average production was raised to over twenty-five pieces per hour, and today the average is over fifty-five pieces per hour. The same results were obtained on all of our work, such as machining, inspection and assemblage.

It is particularly important and interesting to note that many of our most skilled operatives are men and women well along in life. We find that while the young worker has more vigor, the older one is usually more careful and steady, and more anxious to keep up a high average rate of production. Their continuous work on their jobs brings this average production up to that of the younger and more vigorous.

We have demonstrated that strong, healthy women can do work requiring great precision after they are thoroughly trained quite as well as skilled men mechanics. They work on hand-turret screw machines, hand millers, power millers, drill presses, thread millers, punch presses, routers and special machines of all types. They are remarkably efficient as inspectors. We have also taught them to be excellent tool-makers. . .

Advantages of the Vestibule Method

The advantages of the vestibule method of training may be summarized under the following headings:

1. Instruction does not interfere with work being carried along in the normal process of manufacture.
2. Expensive machine tools and other department equipment can be kept up to the standard production, thus decreasing the losses from fixed charges and overhead expense.
3. Breakage and waste materials due to carelessness and lack of supervision are greatly minimized.
4. The bulk of the turnover is taken from the shop and kept in the school. Persons not fitted for the work are discovered before they cause the company a loss by being put on regular work. Ability along other lines can sometimes be discovered,

thus allowing transfers to be made with the minimum loss to employer and employee.

5. The time of workmen and foremen can be given entirely to the routine duties of the shop.

6. Right methods can be taught in detail from the start, thus preventing workmen from falling into wasteful or inefficient habits which must later be overcome.

7. Learners have their habits fixed before becoming acquainted with methods of slighting their work in order to increase production.

8. Skilled workers and foremen are reluctant to teach beginners and do not adapt themselves to individual needs. This is overcome by securing trained instructors who devote more time to each beginner.

9. Few skilled workers are able to analyze operations into their elements and teach them in the best instructional order. This is accomplished by analyses made before the vestibule school is started, and standard practice insures that each instructor follows the approved procedure in teaching.

10. Better sequence of work in good instructional order can be maintained in the vestibule school than in the shop.

11. Uniform methods and standards of quality can be insisted upon throughout the plant.

12. The general rules and regulations governing the habits and daily routine of workers can be taught before they are sent into departments, thus tending to maintain better discipline.

13. Working conditions in the training section are less likely to cause nervousness and discouragement. This is particularly true with women employees, and has an important bearing upon the work of young persons, who are thus freed from the observation and ridicule of expert workers.

14. Emergency demands can be met where it would be impossible to train sufficient numbers in the shop within a reasonable length of time without seriously disturbing the flow of work.

15. The vestibule school gives opportunity for the experimental try-out of machines, tools, fixtures, and methods of operation before they are put into the factory. It is possible to combine the school and the experimental shop.

Disadvantages of the Vestibule Method

Among the disadvantages of the vestibule method of training pointed out by various manufacturers who have tried it, the following appear to be significant:

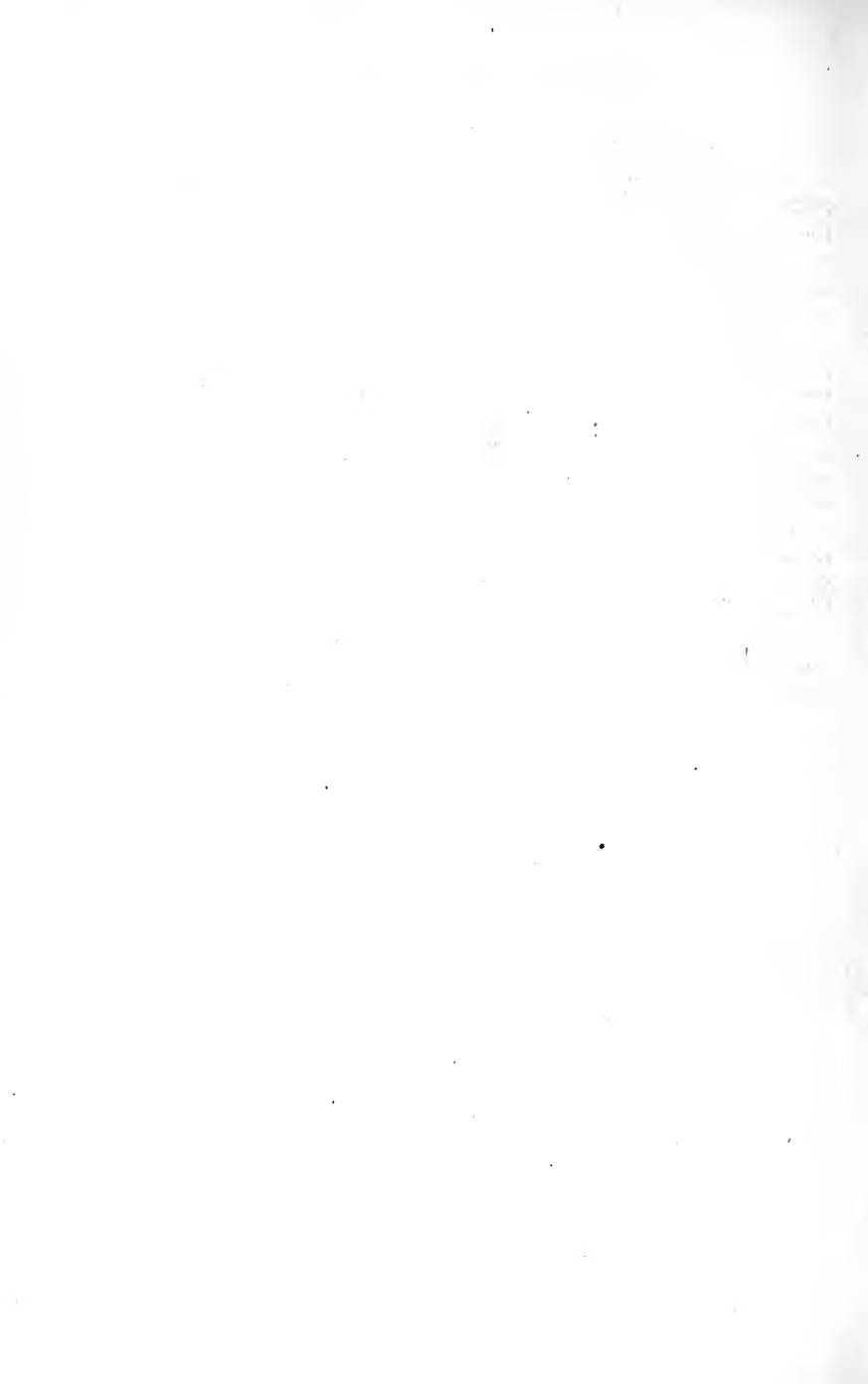
1. Fluctuations in the number of employees to be trained for a given operation may make it uneconomical to retain full-time instructors or maintain school equipment.

2. Production work is always better than work done for practice purposes on waste materials. Since commercial production is not always attainable in the vestibule school, this sometimes becomes a disadvantage.

3. Beginners tend to attain maximum production more quickly when associated with expert workers than when among unskilled companions.

4. The spirit of the students in the school may become that of careless learners rather than earnest workmen. In other words, the spirit of the schoolroom rather than of the shop is sometimes engendered.

5. Vestibule training often tends to become superficial and gives the worker no real understanding of shop procedure. It tends to limit the operator to one or at most a few simple tasks.



XV. THE VALUE OF PSYCHOLOGICAL TESTS

THE PSYCHOLOGY OF INDIVIDUAL DIFFERENCES ¹

An unquestioned acceptance of the concept of the equality of man results in inefficiency wherever applied. In the army it results in seniority promotion. In labor unions it results in an insistence upon an equality of wages for all the workers of a craft. In popular thought on matters of social control it leads to communism and syndicalism. In industry it results in the shaping of jobs to suit the capacity of the average man, with the consequent elimination of adequate stimulus to action for the superior individuals. The concept of the equality of all normal men is a psychological error that has perverted the thinking and weakened the action of all peoples inspired with a true and worthy ideal of democracy.

Possibly the greatest single achievement of the members of the American Psychological Association is the establishment of the psychology of individual differences. You have discovered that normal adult men differ greatly in all human capacities and attainments. You have demonstrated that such differences are much greater than had ever been imagined. You have found that individual differences are relatively small in such matters as height, weight, physical strength, and reaction-time, but that normal adults differ enormously in the so-called higher mental qualities. Guided by this new conception of individual differences you have entered the schools and insisted that pupils be grouped by their mental ages rather than by their chronological ages. You have entered the army and urged that enlisted men be assigned according to their fitness for army tasks rather than by the location of their place of enlistment. You have insisted that commissioned officers be promoted ac-

¹ Walter Dill Scott, President of the Scott Company, President of the American Psychological Association. Address reprinted in the *Psychological Review*. Vol. 27. 1920. p. 84-5.

according to merit rather than by seniority. You have cooperated with progressive labor unions in developing a conception and practice adequate to provide protection for the weak and opportunity for the strong. You have entered industry and insisted that applicants be accepted according to fixed standards; that workers be promoted according to attainments and that each employee be inspired by the particular stimulus most effective for him. Your gospel of diversified talents is permeating our national thought and indicating, on the one hand, the wisdom of a democracy utilizing experts in all fields and, on the other hand, the hazard of all methods of social control based on the assumed equality of normal adults. . .

CAN WORKERS BE TESTED?—CAUSES OF SUCCESSES AND FAILURES ¹

A contemporary vocational counselor, whom I have met, is said to receive each of his clients in an office which has no hat rack and no extra chair. The client enters and the counselor abruptly orders him, "Hang up your hat! Sit down!" The amazed young chap, seeing no place to hang his hat and finding no chair to sit on, does either of two things. He may resent the insult, register anger, and perhaps make a justly impudent reply. If so, he is advised to become a salesman. Or, he may be so astounded by the counselor's unexpected impertinence as to stand awkwardly fumbling his hat, grinning or blushing, with a demeanor that is at least awkwardly meek and humble, in which case he is advised to become a pharmacist.

Such illustrations serve to introduce some of the traditional methods of vocational guidance, occupational placement, and employee selection, based as they are on the observations of a tender parent, the candidate's statements about himself and the impressionistic theory of a prejudiced and ignorant interviewer.

We may add to these, three further traditional methods—the letter of application, the photograph, and the recommendation. Perhaps these last three methods are today in better popular repute than are the first three. But whatever their repute, they are little if any more reliable.

¹ H. L. Hollingworth. *Business Personnel*. November, 1920. p. 16-18, 46-7.

A bona fide advertisement for a stenographer was inserted in a New York newspaper and over one hundred letters of application were received. Each gave, in the applicant's own handwriting and on stationery individually chosen, the main facts of the applicant's business career—education, experience, previous employment—and set forth, with such clearness as the applicant could command, the particular qualifications for the job.

Every fourth letter, in the order opened, was taken, giving a set of twenty-five random samples. Twelve employers were asked separately and individually to rank these letters in an order of merit for *neatness*. A week later they were approached again and asked to arrange them in order for *intelligence*, and a week later, for *tact*. Whatever these traits may mean, a stenographer should have them.

Three months later, the same twelve employers, without previous warning, were given the same set of letters, and asked to do the same three things once more—to arrange the letters in order of merit for *neatness*, *intelligence* and *tact*. This gives data for two points—it will show how much agreement there is among employers in their judgment of these letters of application, and it will show how well a given employer agrees with himself on two different occasions when he tries to judge the letters for the same trait.

The letter marked "A" for purposes of identification was given highest place (1), lowest place (25), and occupied positions all the way along the scale, from poorest to best in *neatness*. Letter B was placed as high as position 4, as low as 25, and was given positions all along the scale by the various employers. Letter C ranged from second to twenty-fifth place, and all the other letters produced this same disagreement among the judges. A letter thrown by one judge into the waste basket as the worst of the lot was placed by some other judge at the top of the list as the best of the lot. The applicant who would have been flatly rejected by one employer, and never even given an interview, was given first chance at the job by some other employer.

In arranging the letters for *intelligence*, the situation was even worse. Almost never did two employers agree, and every letter was assigned positions all along the scale, from 1 to 25. The arrangements for *tact* were of just the same inconsistency.

The data are too elaborate to reproduce here, but I shall be glad to show the figures to anyone who is interested.

Consider now the case where the same employer judged the same set of letters again after a three-month interval. Represent complete agreement between the two arrangements by $+100\%$; no relation at all, except a random one, by 00% ; and a complete reversal of the previous order by -100% . We may then get coefficients of agreement ranging all the way from $+100\%$ down, and if an employer's judgment of a letter of application is really reliable, his two arrangements should be very, very similar—that is, the coefficient should be nearly $+100\%$ in each case. As a matter of fact, the average coefficient is only 52% ; there are coefficients as low as 8% for intelligence, 18% of tact, and even a partial reversal, giving only -14% , in the case of neatness. That is to say, these judgments are so unreliable that an employer who places a given application very high in the series for neatness, or intelligence, or tact, on one occasion, will, three months later, when given the same series of letters, make such different judgments that you would never suppose him to be the same man. The applicant whom he flatly rejected three months ago, may now stand among the very highest in his esteem.

This is a type of psychological study that is much needed in personnel work, since it seeks to evaluate in definite terms the actual validity of the traditional methods. Judgments based on the photograph and on letters of recommendation exhibit the same unreliability. The usual employer does not discover the fact, for he seldom makes many of his ratings twice and almost never compares them with the judgments of another employer.

Is there no way out of the dilemma? There are two ways. In the first place, even these traditional methods, if the proper technic is followed, can be made to yield information of surprising reliability and practical value. Even the much-maligned photograph can be made to reveal with a high degree of accuracy the candidate's relative intelligence, refinement, or vulgarity, although it conveys no information as to his neatness, his conceit nor his sociability. The letter of recommendation has high value when it concerns the applicant's originality, quickness, or intelligence, whereas it has extremely little value if it relates to his integrity, his co-operativeness or his cheerfulness.

Studies of the recommendation, in which one person gives his estimate of another, have been made by comparing the estimates given by different acquaintances relating to the same individual. Indicating human qualities by an array of twenty-four familiar expressions, it appears that on some of these qualities different acquaintances or different previous employers or supervisors will agree closely with each other. For these traits then the single recommendation tells the same story as would be told by all the others.

On other qualities however different judges, in their recommendations or estimates of a person, disagree so strikingly with each other that it would be poor policy to put any faith in a single recommendation bearing on these traits, because the very next person asked would, in all probability, have formed a very different opinion of the person considered.

Two other groups of traits fall intermediate in position between these two extremes. Every recommendation, before being accepted, should be analyzed in the light of this table of traits. If the qualities reported fall in the upper part of the list, considerable faith may be put in the correctness of the opinion expressed. The lower in the list the trait falls, the less confidence should be placed in the recommendation. The practical value of this psychological study of the reliability of recommendations is so great that it seems worth while giving here the list of traits in the order in which they stand as a result of this investigation.

A. Efficiency, Originality, Quickness, Intelligence—With respect to these traits, different judges will agree closely, hence a single recommendation bearing on these traits may be accepted with considerable confidence.

B. Perseverance, Judgment, Will, Breadth, Leadership—On these traits there is fair agreement, and the testimony of a single acquaintance should be given serious consideration.

C. Clearness, Balance, Intensity, Reasonableness, Independence, Refinement, Health, Emotions, Energy, Courage—On this long array of traits different judges, in estimating the same person, tend to disagree with each other to such an extent that no one statement of opinion should be given much weight unless supported by the testimony of another supervisor, employer or acquaintance.

D. Unselfishness, Integrity, Cooperativeness, Cheerfulness, Kindliness—With respect to these qualities the applicant will have impressed different people in such different ways that only a census of many opinions is likely to reveal the true facts, and practically no weight should be given to a single recommendation relating to these qualities.

Since this article is to deal mainly with test methods, the matter of improving the technic of traditional methods cannot be further elaborated here, but it is my opinion that one of the most valuable contributions of psychology to the personnel work is in this field of the critical examination, improvement and standardization of the traditional methods.

The second way out of the dilemma that has been proposed consists in measuring the candidate's ability, more or less directly, instead of relying on indirect symptoms. The applicant is strictly speaking, put to the test. Since either mental or moral aptitudes, on the one hand, or motor dexterity and skill, on the other, lie at the bottom of all industrial and business processes, the tests become psychological tests, rather than gymnastic, medical or social.

Important in most cases is that combination of mental alertness and adaptability which we call intelligence. Data accumulated by the army psychologists show, beyond reasonable doubt, that if the intelligence of the average carpenter, plumber, cook or blacksmith is for convenience called 100%, then to be an average bookkeeper, photographer, filing clerk or band musician requires an intelligence of 115%. But one can be an average tailor, barber, boilermaker, farmer or horseshoer with an intelligence of less than 86%. Furthermore, the average dentist, draughtsman, stenographer, accountant, Y. M. C. A. secretary or physician requires an intelligence of over 120%; and engineering officers and clergymen becoming army chaplains averaged as high as 130%.

Note now the striking differences between these groups in regard to the nature of the materials with which they deal. The 86% intelligent deal with raw materials or with domestic animals; the 100% intelligent (the average man) can handle materials in a semi-finished state and can use simple tools, but cannot deal effectively with abstract symbols. Dealing with simple symbols, records, etc., requires an average of 115%. Individuals in the 120% class can handle complex symbols and can deal in

the simpler relations with other human beings. Officers and chaplains, dealing directly with human material, with other men, require the exceptional average of 130% (and this, as one of my students remarked, seems to fit the chaplain at least to deal with the Almighty Himself).

We hear much in vocational guidance and elsewhere of special ability to work with animals, with tools, with abstract symbols, with other people, etc. The point I wish to emphasize here is that these abilities are not special aptitudes, but instead seem to represent lower or higher degrees of general intelligence. In guidance, in placement and in selection it is important that these facts be known. It is still more important that there now exist several equally good and valuable systems, whereby any individual not actually insane (he may, however, be blind, deaf, illiterate or foreign) can be measured in mental alertness with an error of not more than 5%. To describe this array of methods is, of course, impossible in this account and the interested reader should consult the special articles and monographs relating to them.

But it is wrong to assume that intelligence represents everything, either in choosing a vocation or while on the job. There are, after all, such things as special aptitudes. Everyone knows color-blind men, women who cannot carry a tune, and both men and women who, after years of practice, are unable to play a decent game of checkers, although none of these need be lacking in general intelligence. On the other hand, inmates of feeble-minded institutions sometimes display a startling skill with just these materials. I have in my laboratory the psychographs (charted measures of mental abilities) of two boys of precisely equal general intelligence. One of them cannot reassemble the scattered parts of a patent clothespin, but he is a mathematical prodigy and writes poetry. The other is a poor hand at free verse, but he can make a decrepit gasoline engine hum.

In vocation and employment, then, tests are needed for such special aptitudes as are revealed by the job analyst. These special vocational tests have now developed along four lines, as follows:

1. The Reduced Model: Here a miniature of the actual industrial process is set up—a toy switchboard, a laboratory trolley car, a reduced landscape garden, etc. The candidate's skill

is judged by his ability to handle the miniature. This method, though often experimented with in industry, has not brought good results. In the first place, it shows only what the applicant can do now, not what he may be able to do a year hence. In the second place, although a Shetland pony is a fairly good miniature of a Percheron stallion, in handling the latter one encounters factors never presented by the Shetland pony.

2. The Specimen Task: Here a selected sample of the work is so standardized as to constitute a uniform test: the secretary takes a standard dictation, the clergyman preaches a trial sermon, the prospective office boy is sent on a puzzling errand, the aspiring machinist is set at a standard piece of lathe work or milling, etc. This method differs from the old "try out" in that the task is standardized, is measurable, and is given to all applicants alike. This is the method on which the modern "trade tests" are based, and the trade test idea is now familiar to all who are interested in personnel problems. Among the defects of the method are the facts that it reveals, at best, only present, not potential, skill, and hence can be of little use in guidance or in selection of raw material. Among its virtues is the fact that it is thorough, relevant, susceptible of constant adjustment, and is (if properly handled) solidly based on preliminary trials with operatives of known competence. In the performance, picture and oral form, the method of the sample has marked value in certain limited fields.

3. The Method of Analogy: A third method often tried out in industry is what I shall call that of analogy. Thus it has been assumed that quickness of visual discrimination is an ability required by ball-bearing inspectors. Measures of visual discrimination are then taken, using opticians' charts, etc., and the candidate's ability thus rated. Never, in my experience, has this method met with the success that its obvious character leads one to hope for. The reason is that, although different people show varying skills in working with diverse materials, we cannot break up the mind into faculties and test these separately. In fact, there is no evidence that the mind is composed of such faculties. Nor has any job analyst, to my knowledge, been successful in the enumeration of this and that "trait" as called for by a given kind of work. What jobs are more diverse than prize fighting, plumbing and peddling? Yet all of them may be said to call for energy, industry, judgment, and ability to deal with people.

4. **Method of Correlation:** The method that I have found most directly useful, both in selection and placement as well as in guidance, is what is called the method of correlation. I have seen it used with salesmen, telegraphers, typists, stenographers, telephone operators, line inspectors, business secretaries, hand stitchers, machine operators, label pasters, shell inspectors, efficiency engineers and filing clerks, in every case with definite and provable success. It succeeds not only in detecting present skill, but can be used also to predict potential capacity in one who has never yet tried his hand at the job. The method is simple and straightforward; it is laborious in the beginning, but speedy in the end.

Let me illustrate in the case of typists. Twenty or thirty tests are devised in the laboratory, varying in the materials used, the task set, etc., as much as possible. These tests are given to typists now on the job whose competence is already registered in various ways (production records, supervisors' estimates, etc.), which are combined to give the best possible objective rating. They then stand in a certain order of merit for actual skill. But in each of the tests they also stand in some order of ability. In some tests the order of ability is very like the order of rated skill on the job. Proper mathematical technic will show precisely how close the agreement is. These tests which show ranking of the workers similar to or approximately their known order of merit are then tried out on other groups of typists, in order to make sure that only those tests are finally chosen that yield consistent results. Out of the original thirty tests, involving a great variety of materials and tasks, five tests stand up under repeated trial with the typists engaged in the particular work of a particular firm.

All the thirty tests are now tried on beginners, who are then set to work learning the job, and, in a year or so, after they have reached what seems to be their probable limit of skill, their firm rating and production records are compared with the rankings in all the tests. Certain tests again agree with the objective facts, and among them are the five tests that survived the trials when given after skill was already acquired.

These five tests then constitute a team that will identify either a good skilled typist or a potentially good beginner. Indeed, again by the use of proper mathematical technic, the score in the five tests can be made to reveal the future degree of proficiency of an unskilled applicant within any limits of accuracy

desired by the firm or compelled by the state of the labor market.

If you now ask what traits these five tests measure, it is possible only to reply that they measure typing ability, either actual or potential, with at least four times the accuracy of the traditional methods. From his ability in handling the material of these tests, the beginner can know, within reasonable limits of accuracy, what degree of skill in typing he may hope to attain, and this affords a suggestion basis for vocational guidance as well as for employee selection and for placement. From a practical point of view, this is all that need ever be known. Only the academic psychologist will be worried because he is not able to analyze the processes in greater detail.

It is true, of course, that these tests do not measure the honesty, the morality, the interest or the ambition of the applicants, at least in any direct sense, and it is also true that these character traits are an important part of the morale of industry. "It is well enough," you may say, "to test the memory span, attention type and reaction time of a street-car motorman; but it is equally important to know the strength of his ambition, his fear of Hell, his belief in sabotage and his devotion to his family." That these motives bulk large in vocation and industry goes without saying. They present problems for further solution. In the meantime it is something to have available practical tests of mental alertness and general intelligence, standards of intelligence for general groups of jobs, trade test technic in active development and a sure and accurate, even if laborious, method of relating particular tests to particular types of work. It is especially in this last field that the future developments in job analysis and in vocational direction will be found.

Somewhat aside from the main topic of this article is the importance of the fact that even the traditional methods are capable of a technic that at least trebles their original and usual value. Some of these, such as the systematic interview, the standardized rating based on subjective impression, the analyzed recommendation and, in certain cases, the group reaction to photograph or to personal appearance in general, may be made to yield such useful results that they should always be included in a sizing-up system.

Complaints are often made that test methods have not produced the positive results claimed for them. I make a practice

of inquiring further into such reports, and inevitably it has been found that these represent cases where misguided enthusiasts have misapplied the test method and arbitrarily adopted some second-hand set of tests, without understanding the problems involved in the preliminary try-out and choice of particular tests for the particular work under the particular conditions of a particular industry and a particular labor market and source of supply.

The original laying out of a set of occupational tests requires close study of the industrial setting combined with a high degree of professional psychological skill. The actual use of the tests, once they are laid out, does not require either of these virtues, except in so far as changing shop conditions and labor supply make occasional revisions of standards expedient. The employer who flatly rejects all standardized test technic, and the personnel man who fancies that he can become an industrial psychologist over night and thus solve all employment problems, are both overlooking a good bet. Iodine, in competent hands, is a useful medicine, but it will not cure all ills, and its indiscriminate use may mean certain death. Test methods in vocational guidance, employee selection and industrial placement have, in these respects, properties similar to those of iodine.

VARIETY OF PRACTICAL APPLICATIONS ¹

For each individual, it may be said, there is one occupation which is more suitable than any other, and in every occupation some succeed better than others. This arises from the wide physical and mental differences distinguishing individuals from one another. For example, in some the constructive instinct, in others the acquisitive, in others again the submissive instinct, is paramount. Some are predominantly of the hunting type, others are rather of the pastoral or agricultural type, with appropriate instincts of aggressiveness, tenderness, etc., peculiar to each. Individuals also differ innately in manual dexterity, span of apprehension and memory, etc. Thus in a pencil factory, where twelve pencils have to be picked up from a pile with one

¹ Charles S. Myers. *Mind and Work*. p. 75-91. G. P. Putnam's Sons. New York and London. 1921.

hand, some fail after many attempts, while others are successful at once; and in a printing establishment, some linotype operators never pass beyond the twenty-five-hundred-em class (the em being a measure of output), whereas others, with no effort, can manage, it is said, to set five thousand ems.

Obviously much can be done to prevent the "round peg" from getting into the "square hole" by means of vocational guidance offices for lads and girls on leaving school. A great deal could be effected there merely by sympathetic interviews aided by school records and knowledge of the special requirements and openings in different occupations. Such a procedure would at least help in coming to a broad decision as to whether a given boy or girl is better fitted for mental work or manual employment, for indoor work or outdoor work, for a settled or a roving life, for direction or dependence, etc.

But the scientific study of vocational guidance must be founded on something more than "general impressions" (undeniably valuable though they be). It must undertake a careful physiological and psychological analysis of (1) the requirements of different occupations, and (2) the individual mental and physical differences among those intending to work at them. For the groundwork of the latter task, and for methods of procedure, we are indebted to the experimental psychology of the laboratory. Some of the earliest psychological investigations, those on reaction time, were devoted to a study of the nature of the individual differences observed. It was found that, when instructed to react as rapidly as possible to a prescribed signal, some persons were naturally of the quicker, less reliable, so-called "muscular" type, attending predominately, to the movement by which they had to react, while others were naturally of the slower, more reliable, "sensorial" type, attending predominately to the signal which they were expecting to receive. The advantages of choosing employees for certain occupations according to their reactions have been shown in a certain bicycle-ball factory . . . where after the selection of the best workers on the basis of reaction tests, it was found possible to increase the output by over two hundred forty per cent and to increase the accuracy of the work by two-thirds. . .

Psychological tests of foresight have been applied in investigations upon motor-tram drivers. A close inverse relation has been found to obtain between the degree of a driver's success

at the laboratory tests and the number of accidents recorded against him during his everyday work. The value of such investigations needs no comment.

Tests of the accuracy and speed of reasoning have also been devised. Tests of general information have been frequently employed. These and other tests are now introduced into Columbia University, New York, as an alternative for the matriculation examinations, so as to select those who can best profit by a University career.

Among other available tests may be mentioned those of sensory discrimination, manual dexterity, mechanical skill, aesthetic appreciation, rate of reading, spelling ability, tests which reveal the subject's special interests, his muscular or mental fatigability, his accuracy, steadiness, and neatness, his memory for names, figures, faces or facts, the breadth or detail of his observation, his improvability, distractibility, suggestibility, etc. Their application to those who offer themselves for different occupations, e.g., for machinist's or assembler's work, designing, clerical or secretarial work, salesmanship, etc., is obvious.

On the physical side, tests of muscular strength and endurance are of great importance for certain occupations. Length of arm reach, and the span and shape of fingers may be likewise of value; in one industry, for example, it has been stated that an increased output of from six to nine per cent may be expected by taking such factors into account in the choice of girls for the different departments. Again, in regard to sexual differences, it is clear that there is great scope for research by appropriate tests to determine the occupations which are best fitted to men and to women.

Tests have been devised to measure the worker's rate of feeding a machine, and success in these tests has been proved to be correlated closely with the known fitness of the worker for a fast- or a slow-running machine in the factory. The value of such tests for selection is confirmed by the observation that some workers who are distinctly below the average on a slow operation may be very much above it in work requiring speed—and vice versa. Certain tests which have been applied to measure dexterity and rate of assembling have been found to be closely correlated with the workshop ability, and sometimes indeed have proved the foreman's original estimate of the worker's ability to be wrong, as his judgments agreed far

more closely with the results of the tests after he had come to know the workers more intimately.

During the war such psychological tests were developed with great success. In the United States a staff of experts was engaged (1) in applying tests for estimating the educational level and intellectual ability of each recruit, (2) in recording the men's pre-war experiences and in devising and applying appropriate tests to prove their special qualifications, and (3) in devising and applying tests for the selection and training of telegraphists, gunners, and others. Among the objects of the first of these groups of tests were (a) the allotment of a mental rating to each soldier, so as to help the personnel officers in the formation of organizations of equal or of appropriate mental strength, (b) the assistance of regimental company and medical officers, rendered by careful examination and report on men who were not responding satisfactorily to training, who were otherwise troublesome, or who, in accordance with their degree of mental deficiency, should be recommended for discharge, development battalions, labour organizations, etc., (c) the discovery of men of superior ability who should be selected for non-commissioned officers, for officers' training camps, for promotion or for assignment to special tasks. It is generally agreed that such tests saved many months of needless camp life and that by means of them the right man was far more often put in the right place. . .

Many of the mental characters hitherto mentioned can be readily and speedily tested on groups of fifty or more persons simultaneously. But an objection may be raised that such tests throw no light on the higher, moral qualities of the candidate, such as honesty, courage, loyalty, perseverance, promptness, punctuality, resourcefulness, imagination, organizing ability, self-control, and presence. In point of fact, however, several of these qualities are revealed by many existing tests or by others that can be devised for the purpose, whilst full light can be readily thrown on the rest in the course of individual examination and cross-questioning. None but those who have had experience in psychological tests can realize what a wealth of information in regard to the general "character" of the subject is incidentally gained from a few tests systematically and individually applied during an interview. . .

General impressions are notoriously unreliable, besides being, as already explained, insufficient. The object of psychological tests is, so far as possible, to substitute scientific methods of universal validity in place of individual, intuitive, often capricious and prejudiced, opinions.

Enough has been already said of these tests to indicate that they may be classified under two heads. On the one hand, we may adopt a test which is more or less exactly comparable to the conditions under which the subject will be working; e.g., we may test his powers of typewriting by actual typewriting, we may test his ability to assemble a machine by giving him some parts to put together, or we may supply him with apparatus which will compare with the rapid feeding of a machine. On the other hand, we may test him for isolated mental characteristics, e.g., dexterity, speed of reaction, span of apprehension, appreciation of differences in visual form, and we may utilize and combine the results of his various performances in the following way. First of all, we ascertain what special psychological processes are required for success in the occupation for which the tests are needed. Next, we ascertain how closely success or failure at the tests which we have devised in order to measure these processes is correlated with known success or failure at the occupation in question; that is to say, we compare the order of excellence of a large number of trained (good, bad, and indifferent) operatives at each of the tests with their order of excellence in the workshop as determined by the estimates of foremen, by piece-rate earnings, etc. Then we proceed to "scrap" the tests which show insufficient correlation and we "weight" the useful tests according to their different proved degrees of correlation. Finally, we are able to apply the tests to the actual examination of candidates whose capacity for the work we are desirous of estimating. By this means the relative, as well as the absolute, value of each test is accurately ascertained before it is employed in actual practice, and the likelihood of the candidate's success in any particular occupation can be expressed in the well-known quantitative terms of probability. . .

Because tests are in their youth, it would be ridiculous to urge that therefore they must be put aside until they reach fuller maturity. We might as well have banned surgery and

medicine a hundred years ago because they had not then reached their present stage of advancement, or ban them today because they are not so efficient as they will be a hundred years hence. Applied sciences can grow only by use. Their success must largely depend on the skill with which they are applied. Like any other instruments which man employs, they may be rightly or wrongly used; but this does not mean that vocational selection is unscientific.

VOCATIONAL SELECTION BY PSYCHOLOGICAL TESTS¹

For the purpose of vocational selection, all individuals may be roughly divided into four classes, according to two factors, ability and training. We may show the four possible combinations of these factors by means of the following table:

Natural ability	Natural inability
Good training	Poor or very little training

The four possible combinations to be deduced from this table are: (1) those with natural ability supplemented by special training in some special field; (2) those with natural ability but with no particular training; (3) those with poor natural ability but a thorough training in some particular activity; (4) those with neither training nor ability. The word *training* is used here to cover both education and experience. All individuals, however, whether they are already enrolled in an organization and looking for or being sought for other work, or whether they are new candidates, first applying for a position, may be roughly classified under these four heads.

The first task of vocational selection or training is to discover these facts. Until they are known, no intelligent choice can be made. For instance, when a boy, either within the organization or without, applies for admission to the apprentice course,

¹ Henry C. Link. *Employment Psychology*. p. 174-87. The Macmillan Company. New York. 1919. Reprinted by permission.

a course which occupies a period of years and which is very costly, the question as to whether this boy has the necessary prerequisite education and the natural ability to succeed is sure to arise. He has undoubtedly had some education, but whether his education has gone far enough, or whether he has profited by his educational opportunities to the extent of being able to handle the necessary mathematical problems, is a matter which must be carefully determined. In addition to this it is necessary to know whether the boy possesses the natural ability which will enable him to succeed as an apprentice. How shall these two very important facts be determined? This is just the question for which psychological tests provide the answer.

All tests may be divided roughly into two kinds: Those designed to discover an individual's degree of innate ability in certain directions, and those designed to measure the extent and quality of an individual's previous training and acquired ability. This distinction is by no means a clear and sharp-cut one, for every test whatsoever involves to some extent both natural or innate ability and the ability due to training and education. The tests described in preceding chapters have already made this fact clear. However, for practical purposes, tests may be divided into these two general kinds. When, therefore, the question of vocational training or selection arises, the application of these tests makes it possible to discover what the natural and acquired abilities of an individual are and under which of the four heads given he is to be classified. Let us take, for instance, the case of the candidate for apprenticeship. It is necessary to discover, first of all, what this candidate's training has been, particularly his education in mathematics. In order to ascertain this he is given a mathematical test. This test will indicate quite clearly whether the boy has had the necessary preliminary education and whether he is sufficiently well up on what he has studied to warrant immediate admission into the course. However, in addition to this it is desirable to know whether the boy possesses the right kind of natural ability to make him a successful journeyman. This is a more subtle problem; but in order to obtain a forecast of the boy's development, tests which have previously proved their significance in this respect are given. These tests, described in the chapter on tests for apprentices, do not involve education or training in any particular subject but rather the ability to think and act quickly and appropriately in

certain desirable directions. When these two facts have been ascertained; namely, the boy's education or acquired ability, and his capacity or innate ability, it can be intelligently decided whether or not he should be taken into the apprentice course and trained in the vocation of a tool maker or some other trade. . .

Now, let us suppose that the candidate shows by her performance in the tests for acquired ability that she has had a very poor training in dictation and transcribing. Shall she be engaged or not? If, in addition to her poor training in these respects, she also shows lack of education in spelling, grammar, and the fundamentals of the common-school education, it would probably be unwise to engage her for stenographic work. And, if in addition to her poor education, she displays a lack of innate ability by her performance in the group of tests given for this purpose, the decision would be quite obvious. On the other hand, if the applicant has natural ability, a good common-school education, and is lacking only in ability to take dictation and transcribe, it is very advisable to engage her for a trial, or for special training in the fields in which she is weak. Her inability in dictation and transcribing may be due to poor training or to poor opportunities, and may therefore be deficiencies which, under favorable conditions, the natural capacity of the worker can easily overcome. Workers of this kind are of the utmost potential value, and should be given the most careful consideration by the employment and educational branches. It is in discovering cases of this kind that the use of tests can be of great value in helping industrial organizations to make the best possible use of the human material at their disposal and in providing for the vocational adaptation of their employees.

Wherever tests indicate that an applicant for a certain kind of work is poor in both ability and training, it is unwise and unprofitable, from the point of view both of the individual and of the organization, to hire him for that work. It is advisable, in such cases, to try out the applicant with other tests in order to discover whether he is better fitted to learn some other kind of work. All employment managers and educational directors are troubled with the urgent pleas of candidates who, in their opinion, are unfit for the work or training they demand. Hitherto there has always been a sense of injustice or apparent injustice in situations of this kind because the disappointed

candidate felt that he was not being given a square deal. And as long as it was a question of one man's judgment against that of another, there was always a measure of truth in this suspicion. The use of tests makes it possible to decide, with much less ambiguity and on much more impersonal grounds, whether a person shall be chosen or not. Often, however, when an applicant is particularly insistent upon a trial at a certain work or training, it is advisable to give him the opportunity even though his performance in the tests is poor. This is because the presence of a genuine and driving ambition will sometimes take an individual over the most difficult obstacles. . .

While it is highly advisable to recognize ambition and to give it its just deserts, it is just as desirable to detect *impulse*. Very many candidates apply for a certain kind of work or a certain course of training, not because they are extremely ambitious in that direction, but because they have heard from some successful friend how pleasant the work is and how easy it is to make a high wage in a short time. The new candidate does not stop to consider that what is pleasant and profitable to his friend may not be equally pleasant and profitable for him. In cases of this kind—and every employment office and industry meets them in abundance—the verdict of the tests should be followed. If it is not, and the ill-adapted applicant is hired, the result is quite likely to be another turnover. For as soon as the new worker discovers that the work is not quite as enjoyable and remunerative for him as it is for his friend, he will probably leave. The vocational value of tests is particularly great in this respect. Many useless and costly vocational experiments can be eliminated by their application, and successful ones made possible instead. . .

One of the most important factors in vocational selection is the factor of the individual's choice. Many reasons determine the individual's choice of a vocation, but nearly all of them rest upon some individual peculiarity or bias. One boy may want to be a blacksmith because his father was one. Another, for the very same reason, may want to be anything but a blacksmith. Another boy may want to be an automobile mechanic because he likes to ride around the country. Still another may wish to become an electrician because he has seen an electrician doing some work at his house and the electrician good-naturedly allowed him to help with some of the work. This boy's com-

panion may want to become an electrician also because he wishes to remain in the company of his friend. In a great many strange ways, boys and girls acquire a deep-rooted desire to be or do some particular thing. This desire, whatever its origin may be, is one of the most potent factors in the vocational direction of the individual, and many individuals are made unhappy because circumstances have prevented them from following out their chosen vocation. An industrial organization, however, can not be guided in its selection by this factor except in a superficial way. Every organization is limited in the number of jobs and positions it has to offer, and the vocational guidance and training which it gives are strictly limited accordingly. The institution which can best turn this dynamic force of desire and dislike to account is the primary and secondary school, working in conjunction with all the industries of the community. In the schools, where the emphasis is not primarily on the production of material things, there is sufficient leisure and opportunity to give every pupil a trial at his favorite work. And there should also be sufficient opportunity for the pupil at other kinds of work in order to provide a basis upon which to guide his likes and dislikes into the most promising channels. . .

There is, however, a strong tendency to confuse lack of education with lack of intelligence, a tendency which has promoted much trouble. Foremen and employment managers are too prone to think that an illiterate Pole or Russian or Italian is far down in the scale of intelligence. Consequently, they can not understand why these *stupid foreigners* should object vigorously when they are put at some low grade of work, work which requires no manual or mental ingenuity and which is often merely dirty and monotonous. One of the problems of the psychologists is to find tests which will enable him to divorce intelligence from education, or rather intelligence from a particular language. . .

The vocational value of tests in industries may now be briefly summarized. The problem of every industrial organization is to select and train its workers in such a manner as to make the best possible use of their abilities. In order to do this successfully, it is necessary to discover the exact ability, both innate and acquired, of each individual. Unless these facts are known, it becomes impossible to assign the individual to the work for which he is best fitted or to give him the training

which he deserves. The applying of psychological tests in those fields where their value has been verified is the only method, short of the laborious and costly method of trial and error, which makes it possible to discover these facts. Once the potential and actual ability of an individual has been discovered, the vocational selection or training of that individual can be decided with a measurable degree of intelligence. Whether we interpret vocation in terms of work for its own sake or work for the sake of the reward which it brings, the application of tests makes it possible to promote both the interests of the organization and the welfare of the individual workers.

INDUSTRIAL LESSONS FROM ARMY MENTAL TESTS¹

The following discussion is quoted in the main, from a manuscript by Major Yerkes.

The convincing demonstration of the practicability of mental measurement in connection with placement is one of the conspicuously important contributions of psychological service to the Army. It is generally admitted by those who have taken the trouble to consider the matter, that the methods prepared to meet military needs have wide applicability and possibility of indefinitely increasing value. Within the Army, experienced officers as well as men new to the service recognize that the utilization of mental ratings has increased efficiency by improving placement and facilitating elimination. Psychological service has suddenly created a large demand for technological work. This demand is most insistent from education and industry, although the sciences are making their needs known. Before the war mental engineering was a dream; today it exists, and its effective development is amply assured. . .

Within the industrial sphere, as contrasted with educational, intelligent employment management requires abundant information and the development and use of scientific methods. Individuals, if hired and placed at random, seldom hold their jobs for more than a few days. The enormous labor turnover of many industrial concerns is due chiefly to three causes: (a) the relative unfitness by nature or training of the individual for the

¹ C. S. Yoakum and R. M. Yerkes. *Army Mental Tests*. p. 196-7, 199-201. Henry Holt and Co. New York. 1920.

work assigned, (b) unsatisfactory conditions of labor, (c) the mechanization and the resulting dehumanizing of industrial processes.

For wise and effective industrial placement and occupational guidance, two things at least are absolutely essential: first, definite knowledge of the physical and mental requirements (specification) of the job, and second, equally definite knowledge of the physical and mental characteristics and capacities of the individual to be placed.

If these requirements are to be met satisfactorily, occupations will have to be carefully analyzed in their relations to the individual and definite specifications will have to be prepared. In addition, individuals will have to be classified in accordance with intelligence, temperament, education and occupational taste or preference. It is now possible to prepare specifications and suitably to classify individuals with reference to intelligence, education and occupational taste.

For the present, at least, it is probable that if three grades of intellect were distinguished in industry, as has been suggested for the school, a very great gain would be a degree of fitness of the individual for his task, and in his resulting content and efficiency.

Concerning temperamental measurement and classification, there is little to say, for the methods at once simple and reliable are not yet available. It is nevertheless obvious that temperament is as important as intelligence for industrial placement and vocational guidance. Despite the seemingly infinite variety of temperaments, there are probably just a few classes which have great occupational importance. It is possible, indeed, that even three classes, as in the case of intelligence, might suffice for immediate practical requirements, could we but devise methods of measuring temperamental characteristics as satisfactory as those now used for measuring intelligence.

THE NEED OF CONSTANT VERIFICATIONS¹

In connection with the inventory of each man's abilities, tests to measure proficiency in each of about a hundred trades were devised, in eight months from March, 1918. By the end of Oc-

¹ E. L. Thorndike. *Science*. Vol. 49. 1919. p. 56-8, 60.

tober these tests were in regular operation in twenty-one cantonments, and about one hundred twenty-five thousand men had been tested. Their operation made it sure that a man said to be journeyman ship-carpenter really could do the work of a journeyman ship-carpenter if he was to be sent to the Emergency Fleet Corporation as such; that a man said to be a skilled truck-driver really could drive a truck as required in war-work, if he was to be sent to France for that work, that in general each man's statements and reported career were checked by objective tests and measurements.

These trade tests were devised to fit the needs of the army in the war emergency and did so. They would need modification and extension to meet the needs of employers, labor unions, civil-service examining boards and the like. But the principles and methods according to which they were made have been fully justified. To the question "How well does individual A know trade I?" we can obtain a definite quantitative answer and can reduce its probable error to harmless dimensions. Just as we framed standard, workable, convenient, inexpensive, objective instruments to make sure that men assigned to certain work in the army could do that work satisfactorily, so we could upon order frame instruments which labor unions or civil service boards could use as admission examinations, which economists or business men could use in investigations of wages and production, or which a local survey could use in an intimate study of the total life of a community. . .

Early in the war, the problem of selecting from a given number of men those best fitted for rapid training as gun pointers on ship-board was referred to the Subcommittee on the Psychology of Special Abilities, and at their request referred to Dr. Raymond Dodge. He studied the task of the gun-trainer and pointer, the situations and responses involved, the methods of testing their ability then in use, the men from whom selections would be made, and the practical conditions which any system of selection for this work must meet. He had the problem of imitating the apparent movements of the target which are caused by the rolling and pitching of the gun-platform as a distant object would appear to a gun-pointer on a destroyer, a battleship or an armed merchantman. He solved this by moving the imitation target through a series of combined sine curves at variable speeds by a simple set of eccentrics, motor-

run. He had the problem of imitating the essentials of the control of the gun by the gun-pointer and of recording in a fuller and more convenient form the exact nature of the gunner's reactions in picking up the target, in getting on the bulls-eye, in keeping on, in firing when he was on, and in following through. He solved these by a simple graphic record showing all these reactions on a single line that could be accurately measured, or roughly estimated.

Subsequently he made an apparatus that could be used not only to test a prospective gun-pointer's ability, but also to train both gun-trainers and firing gun-pointers four at a time. The demand for these instruments has been so great that sixty have been built for the Navy for use at short training stations. The success of this led to further similar work, especially on the problem of the listener, the lookout and the fire control party. . .

The applied psychology or human engineering which has been developing so rapidly in the last decade has learned, in the war, if not before, that nothing short of the best in either ideas or men can do its work. Applied psychology is much more than cleverness and common sense using the facts and principles found in the standard texts. It is scientific work, research on problems of human nature complicated by conditions of the shop or school or army, restricted by time and labor cost, and directed by imperative needs.

The secret of success in applied psychology or human engineering is to be rigorously scientific. On every occasion when the principles of sound procedure were relaxed because of some real or fancied necessity, the work suffered. The chief principles in much of this personnel work concerned obtaining data from the sources possessed of fullest and most intimate knowledge, working only with data of measured reliability, determining the significance of facts by their proved consequences and correlations, and verifying conclusions by a prophecy and experiment. Whenever we made the extra effort and sacrifice necessary to tap the best sources of information about a man, rather than the next to the best, there was a gain. When we took pains to compute the reliability coefficients of all our data before going further with them, we saved time in the long run. Every failure to check apparent meaning by objective correlations was disastrous. An unverified hypothesis may possibly be a relatively harmless luxury if all one does with it is to think; to act on it is a grave danger.

Making psychology for business or industry or the army is harder than making psychology for other psychologists, and intrinsically requires higher talents. The scientist doing work for the inspection of other men of science is in large measure free to choose his topics, and to follow up any one important outcome regardless of what task he originally set himself. The scientist who is assigned a problem and is without credit if, instead of its answer, he produces something eventually far more important, has to be more adaptable, more persistent and more ingenious, if he is to succeed equally often. It is relatively easy to be scientific when you can direct your talent in any one of ten thousand directions; yourself asking the questions for which you proceed to find answers! Psychology applied to the complicated problems of personnel work represents scientific research of the most subtle, involved, and laborious type.

A CAUTION AGAINST OVER-EXPECTATIONS ¹

A majority of the writers on this subject have been willing to admit, as did Dr. Hugo Munsterberg, that "completed investigations do not as yet exist in this field," but the sanguine tone of their reports coupled with the natural desire of employers to find quicker and surer methods for selecting workers has led to a great deal of misplaced faith in the utility of psychological tests and experiments.

The following points ought to be very carefully considered by any firm that contemplates the introduction of methods of this sort.

1. Aside from modifications of the Binet scale for determining mental ability, there are no tests which have been tried on a sufficient number of individuals to give standards that are in any degree trustworthy. Even the modified Binet standards are not to be depended upon for persons over fifteen years of age.

2. Better methods of securing standards must be devised in order to obviate errors arising from chance samplings. Because of the small number of individuals examined, it is likely that many of the proposed tests fail to cover the full range of the abilities or qualities tested.

¹ Roy W. Kelly. *Hiring the Worker*. p. 93-7. The Engineering Magazine Company. New York. 1918.

3. The low percentage of correlation between the results of tests so far proposed and the success of individuals in the occupations implies that injustice is certain to be done in many cases, if the standards set are applied indiscriminately and without the exercise of careful judgment.

4. Results from the tests now offered cannot be successfully interpreted by persons who lack a wide experience in psychological methods. Their use ought not to be recommended indiscriminately to employment managers who are not fully prepared to carry on work that still partakes very much of the nature of research experimentation, and who lack the training in statistical methods required for the interpretation of results and the compilation of new standards.

5. The best psychological tests so far devised seem to be those which create situations as nearly as possible like the actual shop task.

JOB ANALYSIS TO CORRELATE WITH HUMAN ANALYSIS ¹

Every worker should be placed in that position where he has the best possible chance to make the most of himself. This must be interpreted as consistent with the larger interests of society as a whole. Our practice is diverse from this principle. Thus one practice which may seem far afield but one which played a very large part in the history of the world is a caste system, such as that of India, where "by the will of the gods" people are placed in a particular calling. Similarly the guilds of Europe determine the vocations which a person should be allowed to enter. The mere proximity of the job and the available jobs have played too large a part in our practice. Lastly, social approval of certain jobs and disapproval of others play a very large part at present in vocational placement in America.

If we should attempt to analyze the reasons which have brought us to the jobs that we now occupy, we might find that the general practices here referred to are significant factors.

¹ Walter Dill Scott. *Annals of American Academy*. Vol. 90. 1921. p. 139-40.

Practices for Placements in Industry

Here are some of the practices which have been believed in and followed by wise men in all ages for placements in industry. No man believes in very many but most men believe in some. Astrology, augury, chance as manifested in drawing of straws, casting of lots or the flipping of a coin, chiromancy, chiromancy, character analysis, divination, fortune-telling, horoscopes, hypnotism, intuition, magic, mediums, mind-reading, necromancy, omens, occultism, oracles, palmistry, phrenology, physiognomy, premonitions, psychological tests, sooth-saying, sorcery, sortilege, sub-conscious hunches, stigmata, talisman, trade tests and telepathy are some of these practices.

If we do not follow these practices in placing the individual in employment then we must depend upon the judgment of the maiden school-teacher, the indulgent mother, the ambitious father, the listless recruiting officer, the mercenary employment agent, or worse yet, the indifferent employment clerk. Vocational guidance has been wholly unscientific and unsatisfactory. People have not been placed with adequate care. Our practice has fallen far short of our principle. Indeed, our practice cannot come up to the principle until the necessary preliminary steps have been taken. These preliminary steps may be analyzed.

Judging Applicants and Workers

We cannot place people wisely until we have developed a skill and a technique of judging applicants, whether that judgment be based on previous experience, whether it be based on the desire of the individual and his interest, whether it be based on some objective measurement of skill or of capacities—or an interpretation based upon actual accomplishments in present tasks—or whatever it is, we must develop a technique of judging people before we begin an adequate system of scientific placement.

Job Description

We cannot place people in positions until we know the positions; that is, we must make an adequate occupational description of every job in the house to which the person appears as an applicant or in which he exists as a worker, before we can place people where they belong. That description must include

many items, e.g., the experience essential; the duties and responsibilities; the conditions under which the work is performed; how each particular job falls in with the other parts of the organization, the kind of a man necessary, the inducements provided. A whole list of items must be provided on every job before we know whether any particular individual is adequately adjusted to that position.

We cannot place people wisely until we have instituted a personnel staff with adequate training and interest to make a study of employees and applicants, and a study of jobs; and with authority to place the workers where they belong, and to provide opportunities for change and promotion.

When we have taken these steps we are then in a position to begin to place people where they may be contented, where they may render the greatest service to the company and where every individual will have the best possible chance to make the most of himself. Labor will not be stable until we have adequate placement.

THE FUNCTIONS OF TRADE TESTS¹

There are two fundamental criteria which a trade test must satisfy:

1. It must differentiate between men of varying trade abilities and knowledge.
2. Its ratings must be objective.

No test can be considered satisfactory unless, in the first place, it distinguishes the person with no specific trade experience, whom we may call the novice, from the apprentice who has spent some little time in his trade. It must also distinguish the ordinary apprentice or learner or helper from the average skilled workman. In addition, if the test is to have its maximum usefulness, it should also enable us to differentiate the ordinary tradesman from the workman who is exceptionally skilled or has had exceptional experience. The ability which a test has to make these distinctions may be called its differentiating power. Whenever the word "differentiating" is used, we must bear in mind that it is a relative term. When we say that a trade test must differentiate, all that is implied is that it must

¹J. Crosby Chapman. *Trade Tests*. p. 17-19. Henry Holt and Company. New York. 1921.

distinguish between individuals who differ by a certain amount in trade ability. Thus, for example, a test may well serve to differentiate between the individual who has one year's trade experience and the individual who has five years' trade experience, but it may be expected to fail to differentiate between the individual who has had eighteen months and another who has completed nineteen months. We shall, therefore, find it necessary at a later stage to define with great exactness precisely the groups between which we expect the tests to distinguish. Any method of testing ability which will make this differentiation between the novice, apprentice, journeyman and expert has the widest application in the realms of selection and promotion within the industry.

The second requirement, which we shall refer to as that of objectivity, is so closely related to the first that it is only necessary to consider them separately chiefly for convenience in thought. Unless a test is objective, the rating which is given will vary from examiner to examiner. The ratings which are made at one time and at one place will not correspond with the ratings at another time and place. Thus, while the measuring rod may be used to divide men roughly into three classes—tall, medium and short—thereby fulfilling the differentiating function, much of the advantage of the measurement is lost unless for each individual or group of individuals the specific measurements are given and are recorded in units or in terms upon which all are agreed.

Outline

With this general introduction we are in a position to discuss the various types of trade test which were employed in the army. The succeeding chapters will, therefore, deal in order with:

1. Oral trade test methods.
2. Picture trade test methods.
3. Performance trade test methods.
4. Written trade test methods.

LIMITATIONS OF MENTAL TESTS ¹

\ If experimental psychology has shown anything, it has demonstrated that capacity for improvement varies greatly with

¹ H. D. Kitson. *School Review*. Vol. 24. 1916. p. 208-13.

different individuals, and the initial standing in a test does not indicate what the standing will be in successive performances. This brings up the question how far the individual may be trained in an activity, and when one observes the astounding increases in capacity displayed in every day life one hesitates to limit the individual to any single vocational possibility. How to arrange conditions of testing so as to provide for this is problematic. Perhaps learning tests will be arranged whereby one learns laboratory samples of activities in the vocations under consideration. At any rate it is clear that any system of tests must take into consideration the fact that the first test does not measure ultimate ability.

The current doctrine is further befogged by its neglect of the volitional factor in human endeavor. Behind all specific capacities lies something that is loosely called will, character, volition, etc. It has to do with the exercise of mental traits which are not directly measurable, at least not readily isolated. Psychological tests appear to be limited when one undertakes to measure such traits as industry, persistence, honesty, etc., and the limitations make it impossible to predict what reaction will take place in future situations. The psychologist is forced to conclude that careers of willing, variable humans cannot be mapped out with scientific precision, as are the courses of the planets. Professor James pointed this out when he wrote, "However closely psychical changes may conform to law, it is safe to say that individual histories and biographies will never be written in advance, no matter how 'evolved' psychology may become".

Most persons will agree that it is possible by means of psychological tests to distinguish between an individual who is characteristically slow and one who is characteristically fast; between one who is characteristically accurate and one who is characteristically inaccurate, as these characteristics are in extreme form. It also is possible to grade people with respect to the presence of certain qualities of ingeniousness, ability to adjust to new situations, etc. The methods for accomplishing these ends, however, are still far from standardized, and vast areas of technical ground must be covered before the tests will have vocational significance.

Dr. Walter Dill Scott of Northwestern University has been using psychological tests in the selection of salesmen, making

measurements of association-time, accuracy of reasoning, memory, etc. It should be mentioned that the psychological tests are not the sole criteria by which selection is made; measurements are also made from physiological and sociological standpoints, and judgments of experienced employers are used. The method employed by Dr. Scott, it will be observed enables one to make selections on an eliminative basis. The results of the tests are used to admit men only to the position of salesman. As to his fitness for other occupations nothing is said. Out of a number of applicants for a position, the attempt is simply made to select the one who shows the greatest mental ability. He is hired on the supposition that with high records in the mental traits tested plus interest and experience, he would be most likely to meet the exacting conditions of the selling occupations. Psychological tests are similarly used at the University of Chicago as an aid in designating students for honor courses. A group of tests is used which exercises various kinds of mental ability, and students who stand highest in the tests are considered likely timber for advancement in the special courses. The results of such a group of tests permit the assignment of ranks on the basis of amount of mental ability possessed without specifying relation to particular occupational tasks. It is quite astonishing to see how surely psychological tests will pick out the brightest persons in a group. All that is needed is a group of good tests measuring fundamental types of mental activity, and some method of combining the records in the several tests into a resultant score. This gives basis for a quantitative statement of amount of intelligence. The qualitative statement which involves specification with respect to occupations is another problem, and is the next step to be taken by experimental psychology.

XVI. THE FAR-REACHING CONSEQUENCES OF FEAR IN INDUSTRY

THE MENACE OF THE FEAR DISCIPLINE ¹

The most demoralizing of industrial poisons is the poison of fear and fear of joblessness pervades the work-relation.

All that Professor Cannon of the Harvard Medical School has taught us about the striking bodily reactions of strong emotions such as worry, anger and fear, we can without violence to language translate into industrial terms, and visualize some such effects and consequences taking place in a field where human nature and its attitude are so decisive—the field of industrial relations.

No one who is alive to the economic importance of industrial good-will can be indifferent to the havoc from unsteady employment on industrial morale, efficiency, and organization itself.

Irregular work means irregular manhood, and irregular industrial loyalties. No program for output, no progressive organization, is possible against the undertow of intermittent work.

Picture what a recurrence of bank failures would do to our credit system! As in finance, mutual confidence is the bedrock of industrial relations, indeed of production itself, and nothing tends to shatter this system of mutual confidence so surely as recurring work-failures.

Regarded from any standpoint the situation is too wasteful to be tolerated. Industrial relations can no more prosper where work is spasmodic than can industrial habits in a country afflicted with crop failure and famine. *Reasonable security of employment is the first step in any genuine industrial relation program.* It conditions everything that follows. It is the mother of industrial morale. Joblessness is next to godlessness.

¹ Meyer Bloomfield. *Steady Work: The First Step in Sound Industrial Relations.* American Labor Legislation Review. Vol. 11. p. 38-40. March, 1921.

EFFECTS OF FEAR ON THE WORKER'S
THINKING ¹

. . . And when a man has no job or when he is simply in the grip of fear that all the future is going to be just as bad as the present, there is no such thing as having the rest of the circle all right. *It is impossible to lay too much emphasis on the way in which men come into what we think are strange ideas and strange feelings, as the result of the lack of a job, the irregularity of a job, the unsteadiness of a job, the insecurity of a job.*

One of the first effects of such uncertainty is to make men begin to feel favorable to the restriction of output.

It is hard to blame a man for not keeping a close eye upon the pile of rough material that means his job, as he sees the pile getting smaller, and the pile of finished material growing larger and larger. It is hard for that man not to go slow, when he realizes that at five o'clock when the whistle blows, the boss may come to him and say: "Joe, this will get you your time. Won't need you in the morning. Ye see, th' work's all done."

This summer, outside of the great dock in London, I found a man who had only about three days work as a docker in about six weeks. I tried to cheer him up by saying: "Well, Jack, I saw a lot of men down there in the Surrey dock that were unloading about six thousand tons of frozen beef from the Argentine, and they were piece-workers, I understand, and they were making fifty shillings." I couldn't have gotten more of a rise out of the man if I had slapped him in the face. He said: "Yes, I know them fellows. Them's the fellows that's takin' the bread and butter out of the mouths of the wives and children of such workmen as you and me. Them's the fellows that's doin' three days' work in one. It ain't right, I tell you! But what do they care, as long as they get their time—the rest of us can starve!"

There was another man on the same dock, who said to me: "Well, you'll be knowin' the reason for this 'ere lack of work, I suppose.

"Well," he explained, "of course it's this 'ere more production propaganda. 'More production—more production!' they

¹ Whiting Williams. The Job and Utopia. American Labor Legislation Review. Vol. 11. p. 13-23. March, 1921.

say. Well, it's bloody lucky that some of us don't 'eed it, or there wouldn't be no jobs for any of us."

Then, too, I am quite sure that the unsteadiness of the job does perhaps more than anything else to substantiate the unavoidable and the inevitable conflict between the employer and employee. When the wheels of industry suddenly stop as they are stopping today, it appears to prove to the worker that his idea of too much production is absolutely right. And I have not a doubt that today men all over this country—workingmen—are saying what I heard them saying in Great Britain; that of course with all the need there is of materials, with all the ways in which the world has run out of its supplies, this sudden stopping of the wheels of production means absolutely only one thing—that the employers have brought it about for teaching labor its place.

Every time we have a cessation of work, or every day that we have an unsteady job, conflict is being registered, making education more and more difficult. Therefore, the common interests of all of us are involved in this matter of the steadiness of industry.

But the most important aspect of this unsteadiness of the job, this irregularity of work, is that it destroys men's moral fibre.

We are too apt to think that the job is simply a matter of bread and butter. That idea, I think, misses the biggest factor in the psychology of the worker, which is that men think of their jobs as offering to them the chief basis for their self-respect. . . The irregularity and uncertainty of the job probably does more than anything else to open men's thinkings (if you can say "thinkings," because it is really their feelings) to the words of the radical who wants to sweep everything away by means of a sudden bloody revolution, and take a new start.

INDUSTRIAL LESSONS FROM WAR DANGERS AND FEARS¹

Fear is the emotional or affective aspect of the instinctive process called into activity by danger. It is the modification of consciousness which accompanies certain instinctive forms of

¹ W. H. R. Rivers. *Instinct and the Unconscious*. The Macmillan Company. 1920. p. 241-6. Reprinted by permission.

action in response to danger, and especially the response by flight. It is especially intense when there is interference with this or any other form of reaction to danger. . .

Reaction to actual danger—The most frequent reaction to danger in man is one of heightened capacity for the activities by which the danger may be met without any trace of the fear which, if present, would inevitably interfere with this capacity. A man in the presence of danger will carry out with the utmost coolness, and often with a degree of skill surpassing that which he usually shows, the measures necessary for the aversion of the danger or his escape from it. In such a case there is complete suppression of the emotion of fear which the danger might be expected to produce, and this suppression is nearly always accompanied by suppression of pain, so that an injury derived from the dangerous object, or from any other source, is not perceived.

A second mode of reaction is the assumption of an aggressive attitude toward the source of danger with the accompaniment of the affective state of anger. In this case there is not simply a suppression of fear, but its place is taken by another emotion belonging to the instinct of aggression. If these lines of action fail, if the serviceable activity which would lead to escape from the danger is interfered with or becomes impossible to carry out, or if the aggressive reaction does not succeed, fear supervenes as an accompaniment either of flight or of the collapse which is apt to occur when the more normal and serviceable reactions fail. In some cases, however, the suppression of fear is so well established that this emotion remains completely absent even when the danger is so insistent and unavoidable that death or violent injury is inevitable. Thus, the emotion of fear may be completely absent during the fall and crash of an aeroplane in which death seems certain, being replaced by an interest such as might be taken by the mere witness of a spectacle, or by some apparently trivial line of thought. It is when some line of action is still possible, but this action is recognized to be fruitless and in vain, that fear, often in the acute form we call terror, is likely to supervene.

Reactions to prospective danger. The state most commonly produced by prospective danger is one of that degree of fear which we call apprehension. This may be so intense as to become indistinguishable from the fear which accompanies the actual presence of danger, but it is more usually a vague dis-

comfort, with minor degrees of the tremor and muscular weakness which accompany fear. . .

Still another form of fear is the more or less persistent state of anxiety which forms so prominent a feature of the functional nervous disorders arising out of warfare that has been adopted in the nomenclature of one of the most frequent forms taken by these disorders. In the healthy person anxiety is a state which comes into existence in consequence of some prospective misfortune or danger, but in morbid conditions it shows itself in the form of more or less continuous apprehension colouring the whole mental life, so that even the most ordinary occurrences are seen in the blackest light as sources of trouble or danger.

Suppression and repression in relation to fear. In the form of reaction to danger which seems to be characteristic of the normal healthy man, there is a complete absence of fear. No effort is needed to keep this emotion out of the mind for it shows no tendency to appear in consciousness. Fear in the presence of danger is, however, so necessary a part of the mental equipment of animals, and is so frequently manifested in childhood, that we can confidently assume this emotion to be potentially present, but in a state of suppression. This assumption is supported by several lines of evidence. A man who when exposed to danger experiences no trace of fear, and behaves with the utmost coolness and bravery, may yet suffer subsequently from acute fear in his dreams. If, as there is much reason to believe, suppressed affective states find expression in dreams owing to the weakening of control normally exerted in the waking state, the occurrence of fear in dreams following a dangerous experience would be a natural consequence of its ordinary existence in a state of suppression.

Still more important and conclusive is the occurrence of fear as the result of shock or long-continued strain and fatigue which lower the efficiency of the higher controlling levels of mental activity. Thus, one of the earliest signs of the strain of warfare is the occurrence of apprehensions in one who until then has passed through the dangers of warfare without fear. The occurrence of fear either manifestly, or in the form of vague apprehensions, when shock or strain has lowered efficiency is naturally explained if the fear has been there throughout, but in so complete a state of suppression that it never passed the threshold of consciousness. . .

The special feature of practical importance in the foregoing statement of the various forms taken by the emotion of fear is that the occurrence of this emotion may be a symptom, often the earliest symptom, of a state of fatigue and strain. Owing to the way in which the society to which we belong, and especially those whose business it is to fight, look upon fear, its occurrence, especially without adequate cause, arouses other emotions, and especially that of shame, which greatly enhance the strain to which the fear is primarily due.

RELATIONS BETWEEN FEAR AND OUTPUT ¹

Fear—In this connection (as a cause for lack of interest) I wonder if it is generally realized what a determining part fear has played in shaping the mental life of manual workers. Fear is an emotion which gives rise to a strained, tense and abnormal state of both body and mind. The subject of fear, particularly if the fear is continuous, is balked and in a sense prohibited from the use of all his faculties. Whatever alertness or responsiveness the fearful person has is all in the direction of removing his fears, or of protecting himself from having them realized.

Of foremost importance to the worker is the fear of unemployment. The fear of losing one's job, either because business has become slack or because, through arbitrary exercise of authority, there may be an unfair discharge, is constantly present. As Whiting Williams says in his interesting article on *What the Workers Think*, in *Colliers*, February 21, 1920, "give us this day our daily job," is the secret prayer of every worker, particularly if he has a family. There is fear that wages will not cover necessary expenses; fear of the undesired arrival of another child, or of sickness that will bring an emergency demand on income. There is also the fear of reprimand—the fear of being "bawled out" by the foreman. "I doubt," said Henry S. Dennison in a recent address at Richmond, Va., "if there is a man here who believes that he can make better progress in his factory by bellowing at his men and I doubt if there is a man here in whose plant there cannot be found some sample of the bellowing-bull type of foremanship."

¹ Ordway Tead. *The Problem of Incentives and Output*. p. 170-9. *Annals of the American Academy*. May, 1920.

There is the fear, sometimes conscious and sometimes not, that the reorganization of process and method, which is frequently taking place in factories, means such a change in the method of doing the work that the worker's acquired skill will no longer have value. This applies particularly, of course, to the introduction of machinery, the incidence of which, as it falls upon the individual worker, may be temporarily unfair and cruel.

Then there is a fear, which has in the past unfortunately had all too good a basis in fact, that the more work the individual did the less return he would get for it because wage rates would be cut or orders would be more quickly completed and a lay-off would ensue.

A TECHNIQUE FOR CONTINUOUS PLANT OPERATION ¹

The fluctuation of employment due to seasonal conditions of demand is always a bugbear to any manufacturing business that is endeavoring to operate harmoniously. Through it the working force is disorganized; some capable employees drift away or lose their keenness; and newcomers at the next period of increased production have to be familiarized with their duties and with local conditions. It is true that the seasonal decline affords an opportunity of ridding the organization of those whose services are least profitable to retain, and here and there an employer might be found who would consider the uncertainty of tenure as working out to his own advantage; but since the significance of labor turnover has become apparent, and the spirit of cooperation is found to work, not only justly but profitably, there has been a widespread desire to stabilize employment, and to reduce the seasonal variation to a minimum.

At the plant of the Dennison Manufacturing Company a marked reduction of seasonal employment has been affected by the application of certain clearly conceived principles. These principles were not put at once into sudden and complete operation, but were given a practical tryout, and were extended first in one direction and then in another, as conditions made possible.

¹ Plan in Use by an American Industry for Combating Unemployment. The Personnel Division, Dennison Manufacturing Company, Framingham, Massachusetts. American Labor Legislation Review, Vol. 11, March, 1921. p. 53-5.

In the nature of things, any very considerable reduction must be a matter of gradual development. It is, indeed, going on here today, with the goal far ahead of present attainment; but results so tangible have been secured that the means through which they have been attained are no longer untested. The five principles applied include:

1. Reduction of seasonal orders by getting customers to order at least a minimum amount, well in advance of the season.

This has been accomplished partly by merely asking for the business, partly by persuasive salesmanship and partly by promising a greater security as to delivery. For example, originally paper box production was extremely seasonal. Orders would not come in in any large number until late in the Summer, and then there would be a painful rush of work until Christmas. As a result of modified sales policies, however, we now secure a considerable number of our holiday orders in January, and even get a fairly large proportion of orders for Christmas delivery in November and December of the preceeding year. Similar results have been accomplished in the crepe line.

2. The increase of the proportion of non-seasonal orders with a long delivery time.

These orders are either "hold orders," not to be delivered until a certain date, or orders to be delivered when ready. This increase is brought about by the same methods of selling that proved effective in securing the transfer of the seasonal orders to the next seasonal period as outlined in (1) above.

3. The planning of all stock items more than a year in advance.

The general method is as follows: Over a year in advance a detailed statement of just what stock items are wanted is placed with our Warehousing Department. The Warehousing Department works out a minimum monthly schedule, based on the distribution of the last year's sales.

Except that production must be kept up to this minimum, the producing department can distribute the work as seems best.

4. The planning of inter-departmental needs well in advance. Thus the orders of our Gummed Label Department for boxes are placed at the beginning of the year.

By the means suggested in the foregoing principles, we have converted all possible seasonal and time-limited orders into articles on which we have long delivery time, and can thus be produced according to a schedule based on production rather than delivery needs. It would, however, probably be impossible to realize benefits as fully as at the present time, if we were in a trade characterized by sharp style variations; but even under such conditions it is probable that some benefits could be received.

5. The building up of "out-of-season" items and the varying of our lines so as to balance one demand against another.

For example, we are developing new paper box items of a sort that are not used for holiday purposes, so that we can make and sell them for delivery at times when the holiday work is light. Items, too, that are securely staple in nature, can safely be made at any time for stock. It is our policy to increase up to the point of a healthful adjustment the number of such items.

Measures of this type are attempts to build the normal business of a concern up toward the peak level of the busy season. They aim not at removing the peaks, but at filling up the hollows. They constitute a healthy, *levelling-up* process, which achieves a positive increase of the total output, at the same time that it decreases the fluctuations.

Besides these methods of decreasing the pressure of seasonal demands, and evening out the inequalities, we can meet seasonal employment by conforming ourselves somewhat to it. We can balance the decrease in work of one department against the surplus of another. We can transfer operatives not needed in one

line to another where there is work on hand. In doing so, we make it a rule to transfer operatives to the same off-season work each time, so that they will develop proficiency in these off-season trades. We can go a step further: we can plan to adjust the work of one department so as to use to advantage the unemployed operatives of another department.

An illustration of this is found in the sample work of our crepe paper department. This requires little special training, and can be handled well by the paper box makers in their dull season. As a matter of deliberate policy, this work is always saved up for December and January, when the slack season of the box makers is at hand.

This method often works incidently to our advantage in other ways besides those which have led to its adoption. It tends, for example, toward producing a more versatile operating force, from whose numbers emergency transfers may at other times more easily be made. As a still further measure, we have arranged to transfer operatives to outside industries. This course of action we resort to only in extreme cases. It has the disadvantage of relaxing the bond of connection between the employee and our company; but it has been found to preserve a certain relation of considerable advantage over complete discharge, or incurring the risk that employees whom we might wish later to take on again might be led to obtain other continuous employment during the period while we were unable to furnish them work.

SECURITY OF THE JOB BY NEW BANKING STANDARDS ¹

The credit problem is our biggest problem, because it lies at the bottom of the question of unemployment and that question is the point of bitterest contact between capital and labor today. One might even say that socialism and trade unionism are both founded on the fear of unemployment.

It is with this conviction that leaders of opinion in Wisconsin, the state which so often has been the pioneer in industrial legislation, have devoted much thought to the problem of un-

¹ John R. Commons. *Unemployment. Compensation and Prevention.* Survey. Vol. 47. p. 5-9. October 1, 1921.

employment prevention. The result of this, in tangible form, has been the so-called Huber Unemployment Prevention bill, which was before the legislature last winter and the enactment of which will come up again during the coming session. . .

The sales department must be subject to the production department, so that rush orders are not taken on that cannot be delivered except by an over-expansion of the business with a certainty that men must be laid off after the rush orders have been finished. The cycle of unemployment is the cycle of rush orders. When credit is good and prosperity is around, people will not wait. The business man thinks then that he must expand his factory; he must take on more laborers, he must get out his orders quickly or some-one else is going to get those orders. A great firm in Wisconsin pulled in laborers from the farms and Negroes from the South, then suddenly laid them off, to be supported and policed by a little city.

But more important than the employer is the banker as the stabilizer of employment. During the recent over-expansion a certain manufacturer applied for a loan of \$250,000 in order to enlarge the plant. The banker turned the application over to the bank's industrial engineer, recently added to the staff, and he showed the manufacturer how, by better economy and better labor management, he could get along without that loan of \$250,000. The banker put the screws on the manufacturer. Six or eight months afterward, when the collapse came, the manufacturer was profuse with thanks to the banker. The service of refusing him credit in order to prevent expansion was much greater than would have been the service of furnishing him credit.

The banking system, which is the center of the credit system, more than the business man who is the actual employer, can stabilize industry, and, in stabilizing industry, stabilizes employment. The difficulty is that no one individual can do it alone; no bank can do it by itself; no one business man can do it by himself; it is a collective responsibility and collective action is necessary. If one person is trying to stabilize his industry by not over-expanding and not taking too many rush orders, he simply knows that his competitors will get his business. But if all the business men, who are competing with each other, know that the banks are treating the others in the same way, then stabilization might be expected to work. So that the in-

ducement to stabilize employment in order that it may be really effective must not only take the example of those manufacturers who have pioneered the way themselves, but must interest the entire banking system of the state or nation in the plan.

Now the Huber bill proposes that when an employer lays off a man, if the man has had six months' work in the state during the year, the employer shall pay him a dollar a day for a period of thirteen weeks, and pay the state ten cents a day additional toward expenses of administration. This creates a possible liability of about \$90, added to every man taken on in case he is laid off through no fault of his own, but simply through fault of the management. It means an added liability which the employer assumes when he hires a workman, so that, under such circumstances, it should be expected that when an employer wants to expand, and he cannot ordinarily expand except by getting credit, he will go to the bank for additional credit and the banker will necessarily inquire as to what security he has that, at the end of these rush orders, he will be able to continue the employment or pay the possible \$90. In other words, the business man and the banker together are the controllers of credit, and it is the control of credit which can stabilize business. The over-expansion of credit is the cause of unemployment, and to prevent the over-expansion of credit you place an insurance liability on the business man against the day when he lays off the workmen. . . In any proposition of this kind there are two questions. Is it practicable? Is it desirable? The foregoing has indicated its practicability. It is based on the knowledge gained from the experience of various European countries and upon the experience of the Industrial Commission with the accident compensation law.

If we recognize that this question of capital and labor acquires its bitterness from this failure of capitalism to protect the security of labor, then we shall conclude that unemployment compensation and prevention is of first importance. We have already removed from the struggle between capital and labor the bitterness over the responsibility for accidents. Labour agitators formerly could stir up hatred of the employer on the ground that the employer gets his profits out of the flesh and blood of his workmen. No longer do we hear that language; but we do hear them say that capital gets its profits out of the poverty and misery of labor and the reserve army of the unem-

ployed. That is the big remaining obstacle which embitters the relation between capital and labor. While individuals may think it is undesirable, yet from the standpoint of the states and of the nation, we must submit somewhat our individual preferences to what may help to prevent a serious menace in the future, and must impose upon capital that same duty of establishing security of the job which it has long since assumed in establishing security of investment.

XVII. FATIGUE CONTROL AND INDUSTRIAL EFFICIENCY

Emphasis in fatigue control is upon "methods, such as motion study, by which the amount of work required for a given quantity of output can be decreased." This criterion, laid down by Bernard Muscio in a report to the Industrial Fatigue Research Board of Great Britain, indicates the general trend of careful opinion. Fatigue tests which aim to find the amount of fatigue present at any time have proved almost wholly futile. Successful fatigue control arises from testing the relative effects of various methods of performing industrial operations on maximum output and on steady physical and mental health for the individual. That combination of technical methods and environmental conditions which produces the greatest output without damage to the human constitution gives the clue to the most effective means of fatigue control in each individual case.

The reduction of useless motions in job processes, the timing of rest periods, the adjustments of benches and seats, the control of lighting and colors, the elimination of distracting noises and sights, etc.—and the effect of such factors upon quantity and quality of output as well as upon the health of workers,—these are the real elements in fatigue tests and control.

THE ECONOMIC LOSS FROM UNNECESSARY FATIGUE ¹

Unnecessary fatigue is one of the greatest of wastes. We believe that a conservative estimate of the loss to our nation in productivity alone is more than twenty cents per worker for each and every working day. We have arrived at this estimate after many years of intensive study of this subject, in connection with our work as consulting production engineers in this country and in Europe.

¹ Frank B. and Lillian M. Gilbreth. Unnecessary Fatigue—A Multi-Billion Enemy to America. *Journal of Industrial Hygiene*. Vol. I. May, 1919-April, 1920. p. 542-5.

There are more than three hundred working days in each year, and the United States census shows more than thirty-five million workers in this country, the output of a large majority of whom is undoubtedly affected by unnecessary fatigue. An instant's figuring shows that unnecessary fatigue, therefore, causes a loss in production that is colossal. This loss is much larger than the total fire loss, and the preventable fire loss alone is shocking. This tremendous loss from fatigue is not for one year only. It is year after year; it is continuous.

An astounding loss in production is by no means the total loss which is chargeable to unnecessary fatigue. There is also the loss in materials that are spoiled and in overhead charges caused by the unnecessarily fatigued worker. Again, there is loss due to absences caused by accident and sickness which are often the indirect results of unnecessary fatigue. Statistics show that the over-tired workers are the ones oftenest injured and oftenest absent. There is also the loss due to the lack of cooperation that comes as a result of the discontent due to over-fatigue, and the resentment due to a belief that the management has not done all it could to provide for the worker's relief from unnecessary fatigue. These losses are real and tremendous, though to some they may seem intangible.

To those who have not considered the astounding costs to our nation by reason of unnecessary fatigue, or who do not believe that their own particular organization is paying heavily for not eliminating such fatigue, we recommend the making of a regular fatigue survey of their own conditions. We have found that such a survey will pay in an organization, large or small. It will pay when there are ten thousand employees and it will also pay in the smallest organizations, even in one's household. We have found it to pay large dividends in the one, and to aid in solving the help problem in the other.

HEALTH, EFFICIENCY AND FATIGUE ¹

The true sign of fatigue is diminished capacity, of which measurement of output in work will give the most direct test. The output must be measured under the ordinary conditions of the

¹ Final Report of the British Health of Munition Workers Committee. United States Bureau of Labor Statistics. Bulletin 249. p. 39-41, 43-5, 251-2.

work, and, in cases where from the nature of the work the output cannot be automatically measured, it must be tested by methods which do not allow the workers to be conscious at particular times of the test being made. In this way the errors due to special efforts from interest or emulation will be eliminated. The result of work expressed in output must be corrected by allowance for all variable factors save that of the worker's changing capacity; changes in supply of steam or electric power and of raw material, for instance, must be determined for correction and interpretation of the actual output returns. The output must be estimated for successive short periods of the day's work, so that the phenomena of "beginning spurt" and "end spurt" and other variations complicating the course of fatigue as such, may be traced and taken into account. Isolated tests of output taken sporadically will be misleading. The records must also extend over longer periods to show the onset of fatigue over the whole day and over the whole week, and under particular seasonal or other conditions, in order to detect and measure the result of accumulating fatigue.

Measurements of output must obviously be recorded at so much for each individual or for each unit group. The size of total output will be meaningless of course without reference to the numbers engaged. But it will also be important for proper management to take account of the output of particular individuals. This in many factory processes is easily possible, and when it has been done the results have shown surprising variations of individual output which are independent of personal willingness and industry, and have generally been quite unsuspected by the workers and their supervisors before the test was made. Information so gained is valuable in two respects. Good individual output is often the result of escape from fatigue by conscious or unconscious adoption of particular habits of manipulation or of rhythm. Its discovery allows the propagation of good method among the other workers. In the second place these tests of individual capacity (or its loss by fatigue) give an opportunity for rearrangement of workers and their assignment to particular and appropriate processes of work. Astonishing results, bringing advantage both to employer and employed, have been gained in this and other countries by the careful selection of individuals for particular tasks, based not

upon the impressions of foremen but upon the results of experiment.

In passing it may be said that if the proper adaptation to particular kinds of labor of the relations of spells or shifts of work to rest intervals and to holidays is to be determined, as it can alone be, by appeal to experiment, it will of course be an essential condition for success that the workers should cooperate with the employing management and give their highest voluntary efforts toward the maximum output during the spells of work. It is not surprising that where employers, following tradition rather than experiment, have disobeyed physiological law in the supposed interest of gain—and for a century this has been almost universal—the workers have themselves fallen very commonly into a tradition of working below their best during their spells of labor. In so far as hours of work in excess of those suitable for maximal efficiency have been imposed, during the last two or three generations of modern industry, upon the workers a tradition of slowed labor must necessarily have arisen, probably in large part automatically, as a kind of physiological self-protection. Without some conscious or unconscious slackening of effort indeed during working hours of improper length in the past, the output might have been even more unfavorable than it is known to have been for the hours of work consumed.

Accidents and Spoiled Work

An important and early sign of fatigue in the nervous centers is a want of coordination and failure in the power of concentration. This may not be subjectively realized, but may be shown objectively in an increased frequency of trifling accidents, due to momentary loss of attention. Such accidents may result in personal damage to the worker, trifling or serious, breakage of tools or materials, or the spoiling of work. In well-managed factories the incidence of accidents of this kind is recorded for unit periods throughout the day, and these records may provide a good secondary index to fatigue, but only in so far as they are corrected by reference to the rate of work being done and other variables. . .

Taking the country as a whole, the committee are bound to record their conviction that conditions of reduced efficiency and lowered health have often been allowed to arise which might

have been avoided without reduction of output by attention to the details of daily and weekly rests and other similar means of welfare and favoring conditions. The signs of fatigue are even more noticeable in the case of managers and foremen, and their practical results are probably more serious than in the case of the workmen.

Finally, it must be remembered that when fatigue passes beyond psychological limits ("overstrain") it becomes ill health, which leads not only to reduced output but to more or less serious damage of body or mind. There is also, of course, much industrial sickness and disease which bears no exact relation to fatigue, though it may follow or precede it. Subsequently sections of the present report are concerned with general and special diseases associated with factory life and an account of means for their amelioration. Here it is only necessary to draw attention to the primary and fundamental importance of maintaining a high standard of health in the industrial worker. For without health there is no energy, and without energy there is no output. The actual conduct of business is thus primarily dependent upon physical health. Moreover, health bears a direct relation to contentment, alertness, and the absence of lassitude and boredom, conditions bearing directly upon industrial efficiency. In this matter the interests of the employer and the workmen are identical. Nor are their respective responsibilities separable. The employer must provide a sanitary factory and suitable conditions of labor. The workplace must be clean and wholesome, properly heated and ventilated; there must be suitable and sufficient sanitary accommodations; dangerous machinery and injurious processes must be safeguarded; circumstances necessitate in many factories the establishment of industrial canteens, the provision of seats, suitable overalls, lavatories and baths, rest rooms, and first aid appliances. Owing to the factory employment of many workers for the first time, and of increased numbers of women, often at a distance from home, arrangements must be made for individual supervision and the maintenance of their health. The employment of boys also calls for special vigilance and attention.

Further, it has been recognized for many years that the wise employer considers the personal well-being of his workpeople. He cannot be only satisfied with the external betterment. He

will have regard to the individual worker. Their nutrition, their rest and recreation, their habits of life, are all of interest and importance in relation to their health and efficiency.

The problems of industrial fatigue and ill health, already soluble in part by reference to an available body of knowledge well known and used in other countries, have become acute during the great recent development of the munitions industries of Great Britain. It is not too much perhaps to hope that the study of industrial fatigue and the science of management based upon it, which is now being forced into notice by immediate need, may leave lasting results to benefit the industries of the country during succeeding years of peace.

The national experience in modern industry is longer than that of any other people. It has shown clearly enough that false ideas of economic gain, blind to physiological law, must lead, as they led through the nineteenth century, to vast national loss and suffering. It is certain that unless industrial life is to be guided in the future, (1) by the application of physiological science to the details of its management, and (2) by a proper and practical regard for the health and well-being of our work-people in the form both of humanizing industry and improving the environment, the nation can hope to maintain its position hereafter among some of its foreign rivals, who already in that respect have gained a present advantage. . .

The subject of industrial efficiency in relation to health and fatigue is in large degree one of preventive medicine, a question of physiology and psychology, of sociology and industrial hygiene.

Fatigue is the sum of the results of activity which show themselves in a diminished capacity for doing work. Fatigue may spring from the maintained use of intelligence, the maintenance of steady attention, or the continued use of special senses. When the work is monotonous fatigue may appear in the psychical field; monotony may diminish capacity for work; on the other hand "interest" may increase it.

Fatigue should be detected and its causes dealt with while it is still latent and before it becomes excessive. The tests of fatigue are diminished output, the failure of concentration as shown in increased accidents and spoiled work, staleness, ill health, and lost time.

Without health there is no energy; without energy there is no output. More important than output is the vigor, strength, and vitality of the nation. The conditions or those favorable to the body itself (e.g., food, fresh air, exercise, warmth, and adequate rest), and, secondly, a satisfactory environment (e.g., a safe and sanitary factory, suitable hours of work, good housing accommodation, and convenient means of transit).

SIGNS AND SYMPTOMS OF FATIGUE ¹

It must be repeated that the subjective sensations of fatigue are not a measure, or even an early sign, of it. Real or objective fatigue is shown and is measurable by the diminished capacity for performing the act that caused it.

Bodily fatigue. Fatigue following muscular employment is primarily nervous fatigue, as explained already, and we have seen that no advanced degree of muscular fatigue as such can be obtained by voluntary action, for fatigue in the nervous system outstrips in its onset fatigue in the muscles. In accustomed actions, however, as in walking or digging, where there had been habituation, the activity may be so prolonged without great nervous fatigue as to give approaching "exhaustion"—that is, notable loss of chemical substance—in the muscles. Industrial work is habitual work, but the case in which muscular labor is so intense and prolonged as to give exhaustion in this sense need not be considered here, nor the causation of the special symptoms which arise. It must be noted, however, that practically the whole of the mechanical energy and heat yielded by the body during work comes from the chemical energy stored in the muscles. In proportion as this store is called upon, and quite apart from the question of fatigue, it must be made good by supplies from the blood and ultimately from the food. Practically the whole of the energy transformed in the muscles is derived from carbohydrate material, and the importance of this in relation to the diet of workers is discussed in Memorandum No. 3.

¹ Signs and Symptoms of Fatigue. Memoranda of the British Health of Munition Workers Committee, 1917. United States Bureau of Labor. Statistics. Bulletin 221. p. 50-2.

For work in which severe muscular effort is required it seems probable that the maximum output over the day's work and the best conditions for the workers' comfort and maintained health will be secured by giving short spells of strenuous activity broken by longer spells of rest, the time ratio of rest to action being here, for maximal efficiency, greater than that for the employments in which nervous activity is more prominent or more complicated than in the processes involved during familiar muscular work. This difference may be connected directly with the greater bulk of chemical material which must be mobilized when, as in severe muscular exercise, so large a proportion of the whole body mass is engaged in the chemical events involved in movement and doing work; but further scientific study is needed here.

Nervous and Mental Fatigue

It is under this head, as we have seen, that the special problems of industrial fatigue arise. The signs and symptoms of the fatigue will depend upon the nature of the particular work done, whether it be general bodily work of this or that kind, carried out in fixed routine, or whether it involve mental activity of a simple or of a more complicated kind. The fatigue may spring from the maintained use of intelligence and observation with varying degrees of the muscular effort necessary in every kind of work, or from the maintenance of steady attention upon one skilled task, or of distributed attention, as when several machines are to be tended or other manipulations performed; or, again, it may depend upon the continued use of special senses and sense organs in discrimination, whether by touch or sight. It will be affected greatly according to whether the worker has opportunity for obeying his natural rhythms, or whether unnatural rhythm is imposed upon him by the pace of the machine with which he works or by that of his fellow workmen. Considerations so inexplicable at present in terms of physiology as to be called "psychology" will also arise; if the work is of a "worrying" or "fussy" kind, with a multiplicity, that is to say, of imposed and irregular rhythms, fatigue will be more rapid, perhaps on account of the more numerous and "higher" nervous centers which become implicated.

Monotonous Work

And much industrial work is monotonous—offers some special problems. It has been seen that uniformly repeated acts tend to become in a sense “automatic,” and that the nerve centers concerned become less liable to fatigue—the time ratio of necessary rest to action is diminished. But when monotonous series are repeated, fatigue may appear in what may be called the psychical field, and a sense of “monotony” may diminish the capacity for work. This is analogous to, if it does not represent, a fatigue process in unrecognized nervous centers. Conversely, “interest” may improve the working capacity even for a uniform monotonous activity, and the interest may spring from emotional states, or, as some think, from states of anticipatory pleasure before mealtime and rest (“end spurt”), or again, from a sense of patriotism eager to forward the munitions output.

It may be remarked that mental processes, like those involved, for instance, in adding up figures, may be maintained for very long periods—subject to the needs of change of posture and of diurnal sleep—with no great loss of capacity, that is, without marked fatigue in that particular process. Such diminution of capacity as occurs, and the sense of fatigue that is felt subjectively by common experience in such a task, appear to be due to “monotony,” and to be removable by means of “interest.”

For practical purposes in industrial management two chief characters of nervous fatigue must be observed. First, during the continued performance of work the objective results of nervous fatigue precede in their onset the subjective symptoms of fatigue. Without obvious sign and without his knowing it himself, a man's capacity for work may diminish owing to his unrecognized fatigue. His time beyond a certain point then begins to be uneconomically spent, and it is for scientific management to determine this point, and to determine further the arrangement of periods of rest in relation to spells of work that will give the best development over the day and the year of the worker's capacity. Second, the results of fatigue which advances beyond physiological limits (“overstrain”) not only reduce capacity at the moment, but do damage of a more permanent kind which will affect capacity for periods far beyond the next

normal period of rest. It will plainly be uneconomical to allow this damage to be done.

For these reasons, chief among others, it will be important to detect latent fatigue, and since sensations of fatigue are unpunctual and untrustworthy, means must be sought of observing the onset of fatigue objectively.

It has happened, moreover, that, rightly or wrongly, a suspicion has grown up among workers that any device for increasing output will be used for the profit of the employer rather than for the increased health and comfort of the workers. It would be out of place here to touch on the economic and social problems which arise in this connection, but until such solutions are found for them as will bring a hearty cooperation between employers and employed, in the task of finding the optimum condition of work for the benefit of both, there will be no certain prospect of determining the true physiological methods for getting the best results in modern industrial occupations.

The committee believes that in the present time of crisis patriotic incentive has done much to abolish customary reduction of effort among munition workers, but it is of great importance to note that a special and strenuous voluntary effort in labor, if it be maintained under a badly arranged time-table of work and rest, does not necessarily bring increased output over a long period, however praiseworthy the intention of effort may be. Under wrong conditions of work, with excessive overtime, it is to be expected indeed that some deliberate "slacking" of the workers might actually give an improvement of output over a period of some length by sparing wasteful fatigue, just as the "nursing" of a boat crew over part of a long course may improve their performance. It cannot in such circumstances be said that a workman so restraining himself, consciously or unconsciously, is doing more to damage the output on the whole than the employer who has arranged overlong hours of work on the baseless assumption that long hours mean high output.

THE PREVENTION OF FATIGUE ¹

Everyone knows that continuous muscular effort necessarily involves more or less weariness or fatigue. Such fatigue is

¹ Reynold A. Spaeth. *Prevention of Fatigue in Industry*. *Industrial Management*. January, February, May, 1920. p. 7-9, 120-1, 411.

in no sense harmful to normal people, provided they rest from time to time. Just how long one may work or how often and long one should rest varies with the individual. Normal fatigue of this sort is no more injurious to the human machine than running is to a steam engine. Indeed it is less injurious. For the human machine—unlike the steam engine—carries an automatic repair kit that begins to operate the moment the machine comes to rest. The process of automatic repairing is so delicately adjusted that, as we all know, a rational amount of exercise and work actually increases the machine's strength. It is as if we started with a diminutive half horsepower engine which gradually and automatically increased to five or ten horse power. So far there is no problem; nature seems to have designed the human machine on foolproof lines. Yes and no! Unfortunately an automatic stop was somehow omitted in the original specifications. Local safety devices, however, do exist. It has been clearly demonstrated, for example, that the conduction of a nervous impulse to a muscle ceases long before the muscle is actually and totally played out. If we consider the human will as a power generator, the nerves as the line wires and the muscles as a motor mechanism (which they obviously are), this safety device corresponds to an unseen hand opening a switch to prevent an overload.

The stubborn fact remains, however, that we cannot be absolutely sure just when we have worked long enough. Our subjective sensations of weariness are unreliable. Sometimes, especially if work is monotonous and uninteresting, we tire quickly; again, we may become so absorbed or fascinated by the job in hand that we lose our sense of time and drive ourselves abnormally without any consciousness of discomfort. These facts complicate the study of the fatigue problem. We do not know when to stop, and we cannot be sure that we are seriously overworked until we become so certain that it is too late. Then the damage has been done. The various delicate protection and compensation mechanisms are thrown out of alignment and our machine refuses to work.

We must therefore distinguish clearly between normal fatigue from which we recover over night or over the week end and cumulative fatigue which in an advanced stage is often associated with a nervous breakdown, a pathological condition from which simple rest in the ordinary sense gives little or no relief. Normal fatigue may merge almost insensibly into cum-

ulative fatigue; it is impossible for physicians or physiologists to say just where fatigue ceases to be normal and becomes cumulative. Cumulative or pathological fatigue may develop in any worker, in any industry. Unlike certain poisons, or exposed gears and belts, this particular danger is not limited to any specific occupation and it constitutes, therefore, the most widely distributed industrial health hazard. The chief reasons why cumulative fatigue is considered a formidable health hazard are: (1) the difficulty of detecting it in its early stages; (2) the fact that a "nervous breakdown" frequently means a permanent injury to health; and (3) the fact that—unlike the more obvious and spectacular hazards—cumulative fatigue is not well understood and neither the symptoms nor the treatment have received the attention they deserve, . . .

The exact relation between cumulative fatigue and emotional over-stimulation that incites to excessive effort is not known. Both conditions approach the pathological through the using up of energy reserves which are not normally accessible, and in failing to be cured by a brief rest. The net results of long continued cumulative fatigue and over-stimulation are: (1) "breakdown" variously interpreted as mental, nervous, neuroses, psychoses, etc.; (2) loss of workers in the turnover; (3) shortening of trade life. The economic disadvantages of these results are too obvious for further comment. . . .

In passing through a modern factory it is astonishing to observe the amount of energy that is wasted by workers. We can scarcely begin to discuss the host of environment factors that contribute to the normal fatigue of industrial workers. Some of these factors, such as illumination and ventilation, have already developed to highly specialized branches of engineering. In both of these cases, however, development has been one-sided; the technical phase has been highly perfected while the physiological side has been neglected. The most ideal system of illumination cannot produce and maintain a maximum output unless the eyes of the workers have been functionally perfected, either by nature or the oculist. Optometrists know that a perfect pair of eyes adapted for both near and far vision is the rare exception, not the rule. Progressive managers are just beginning to appreciate this fact.

In launching our attack upon unnecessary fatigue, we can well begin by a routine examination of eyes. Every individual

should be included, for even if glasses are being worn there is no guarantee that their optical formula is not obsolete. In making this systematic examination of eyes, it should be borne in mind that the fatigue associated with so-called "eye-strain" is frequently due to unbalanced eye muscles, i.e., a tendency to be cross- or wall-eyed. Even when vision is perfect, apparently mysterious digestive disturbances and headaches often result from defective eye muscles. Both vision and eye musculature must therefore be critically examined. The selecting of a first class man to make the eye survey is an economic investment that will amply repay the management both in production and morale.

The economic advantages of proper illumination are universally appreciated by intelligent managers. More light means greater production; nothing could be simpler. But when we approach the more complex field of heating and ventilation the answer is not so obvious. To a physiologist it seems astonishingly paradoxical to find the most elaborate routing systems, time-study methods and other paraphernalia of scientific management in a plant where some workers perspire beside uncovered steam pipes and others in the same room are cramped by cold. Frequently managers install highly accurate therm-regulating devices which hold the temperature but disregard humidity entirely. And yet we know that the "zone of comfort" is determined both by moisture and temperature. The discomfort, lassitude and avoidable fatigue associated with a hot, over-moist working environment are well known. Here again the physiological aspects of the problem have been accorded a secondary place. . .

Whenever an industrial process involves heavy work or work requiring constant standing or sitting, and especially when the task is repetitive and demands constant and close attention, rest periods should be introduced. For ideal results, both the duration and the distribution of the rest periods must be determined experimentally for each individual process. A five-minute period in the middle of the morning and afternoon sessions is a good way to begin. In some plants, at the sound of a bell, the power is shut down, windows are opened and the group operators perform a few simple breathing exercises. This is sound physiological practice for by increasing respiration the "fatigue products" in the blood tend to disappear by oxidation.

The calisthenics likewise tend to distribute the fatigue products in a uniform way, which reduces unpleasant local sensations of discomfort and weariness. Unless the exercises are conducted by a spirited leader they are likely to become very casual and lose much of their effect. In such cases it is better to defer the exercises until a proper leader can be developed. . .

What, then, is our final conclusion regarding "standard" times and the time-study method? Must the entire technique be considered faulty, unscientific and unpractical? By no means. Astonishing results can be obtained under ideal conditions. But in order clearly to understand these results we must first ask why time study was ever considered necessary? What ever led Taylor to think of the scheme? Briefly, it was because an antagonism rather than a harmony existed between the interests of workers and managers. We are not concerned with deciding where the fault lay. Both workers and managers were often ignorant, prejudiced, fooling themselves or deliberately dishonest all along the line. But Taylor saw, through the eyes of an idealist, that if mutual confidence and trust could be established in place of soldiering, driving, rate cutting and the thousand other throat-cutting devices, growing out of mutual suspicion—efficiency, production, harmony and profits must result. Now where time study and task setting get results is (1) in teaching the management what it has forgotten or never known about the difficulties and annoyance of individual jobs and (2) in actually establishing mutual confidence and loyalty between the workers and management. Less "scientific" but equally successful managers have found that where man and master really believe in each other conscientious work is bound to result. In other words, loyalty and fairness are fundamental and can get results without "elementary times"; and elementary times get just nowhere alone. It is not the God-like irrevocability of a "standard time" that makes task setting successful, but the feeling among your men and women that the cards are on the table face up, and everyone is getting a square deal. The engineers, conscious of the third decimal in their time elements, are still shouting about the exactness of the time-study method. They keenly resent Hoxie's criticisms and retaliate by calling him "queer" and "prejudiced." But they must face the fact that task setting is a dangerous tool in unscrupulous, ignorant or inexperienced hands. They must realize that time-study

methods are unstandardized. They should insist upon a committee appointed by the Society of Industrial Engineers to agree upon a unified time-study method. Such a committee should include, in addition to a group of representative time-study men, at least one expert statistician, a psychologist, a psychiatrist, an industrial physician, a scientifically trained social service worker and a physiologist.

PRACTICAL APPLICATIONS ¹

This principle has been applied practically in the case of five hundred shovellers who were being employed in shovelling, with a shovel of constant size, material of very varying weight, —sometimes coal, sometimes ashes, at other times heavy iron ore, etc. Experiments were conducted with shovels of different sizes in order to ascertain the optimal weight per shovel load for a good shoveller. The best average weight was found to be twenty-one pounds. Accordingly shovels were made of different sizes, in proportion to the heaviness of the material shovelled, so that each shovel whether full of coal, ash or iron, etc., weighed twenty-one pounds. This was the most important innovation, although others were at the same time carried out. The results were as follows: (1) the average amount shovelled per day rose by nearly 270 per cent—from 16 to 59 tons per man, (2) 150 men could now perform what 500 men had performed under previous conditions, (3) the average earnings of the shovellers increased by 60 per cent, (4) the cost to the management, after paying all extra expenses, was reduced by 50 per cent, (5) there was no evidence of increased fatigue of the shovellers. . .

Laboratory experiments have shown that the subjective feeling of fatigue is no criterion of an incapacity to perform satisfactory work. We have experimental evidence that an excellent output of work may be obtained when the feeling of fatigue is severe. A similarly untrustworthy (but opposite) feeling of efficiency occurs under the influence of alcohol and in certain conditions of fatigue, when the work performed under its influence is actually less accurate and reliable.

¹ Charles S. Myers. *Present Day Applications of Psychology*. p. 8, 14-15. Methuen and Company, Ltd. London.

During rest after a period of work a certain amount of practice is lost, but as an offset to this, a certain amount of fatigue is lost, and there is also, on the other hand, a loss of incitement and settlement. Various experiments have been conducted in order to find the "most favourable pause," i.e. the pause in which the various factors so operate as to produce a maximal amount of work after the pause.

In the factory the importance of interpolating more frequent rest pauses is only just beginning to be realized. There can be no doubt that an unbroken morning or afternoon's work of four or more hours is economically unsound, and that the systematic introduction of rest pauses (together with the elimination of periods of slackness, needless movements, etc.) must lead to a vast improvement in quantity and quality of work. Let me exemplify this by quoting the results of a trench-digging competition during the present war between two companies. The officer of one company allowed his men to work uninterruptedly until their condition demanded a rest. The officer of the rival company divided his men into three sections, of which each section successively worked their utmost for five minutes and rested for ten minutes. This systematic arrangement resulted in an easy win for his company. So too in a certain munitions factory, the interpolation of a fifteen-minute rest in each hour is reported to have yielded a definite increase in the output of work, despite the initial objection of the men, who were being paid by piece-work.

The German shipbuilders have recognized the better output of work on the Clyde, despite, nay rather because of, the shorter hours of their daily work. A certain firm in Manchester had factories both in Lancashire and Belgium. The hours of work in their Lancashire factory were fifty-one a week: in their Belgian factory sixty-six a week. Yet for identical work, the Lancashire operatives produced the larger output.

PHYSIOLOGY OF MONOTONY¹

It goes without saying that monotony of work, of which these are random examples, cannot be avoided in our industries.

¹ Josephine Goldmark. *Fatigue and Efficiency*. p. 67-8. New York Charities Publication Committee. 1912.

It is a part of their development, and even when ingenious machines are invented to do work previously done by hand, the running and feeding of such machines often provides only another form of monotonous work for the human agent. With subdivision, and the loss of craftsmanship, monotony of work in greater or less degree is inevitable, and may well be accepted as such. For when once monotony is recognized as a real hardship, and as in itself a source of fatigue, rational means of relieving it may be sought, in shortening hours of monotonous labor and alternating work of different kinds. . .

From our physiological point of view, this is entirely logical, because the strain of monotony is not due merely to the distaste for work and the aversion it engenders. Monotony of occupation is a true factor in inducing fatigue, because it has a true physiological basis, which can briefly be made clear. We know that with repetition and sameness of use there results continuous fatigue of the muscle or organ used. So, too, with the nerve centers from which our motive power springs. We must bear in mind that the special functions of the brain have separate centers. Thus, there is a center for hearing, another for sight, another for speech, etc. When certain centers are working continuously, monotonously, from morning to night, day by day and week by week, it is physiologically inevitable that they should tire more easily than when work is sufficiently varied to call upon other centers in turn.

The monotony of so-called light and easy work may thus be more damaging to the organism than heavier work which gives some chance for variety, some outlet for our innate revolt against unrelieved repetitions. Monotony often inflicts more injury than greater muscular exertion just because it requires continuous receiving work from nerve centers, fatigue of which, as we have seen, reacts with such disastrous consequences upon our total life and health. The evils of monotony illustrate again how closely all the functions of our life are bound up together; how the physical and nervous and psychic parts of us react and interact upon one another. Aversion from a monotonous grind of work, the effort of the will to "keep up," requires just so much more nervous stimulus from already tired nerve centers.

SCIENTIFIC CONTROL OF FATIGUE FACTORS¹

If a search after ways of eliminating fatigue is to be thorough the individual worker should be carefully observed and the conditions of his task should be carefully analyzed. Such an analysis reveals that there are primary and secondary sources of fatigue. The primary source of fatigue lies in the performance of the essential part of the operation itself involving the transformation of a definite amount of energy. This is the irreducible minimum, stripped of all non-essential accompaniments. It is sometimes possible, as will be shown later, to measure with a fair degree of accuracy the amount of work performed in this essential part of the operation and thus determine the primary fatiguing capacity of the task. This source of fatigue is unavoidable.

But it is different with the secondary sources of fatigue. These comprise certain actions and bodily positions which accompany but are not needed in performing the task, together with certain other environmental conditions under which the task is performed. Gilbreth found that with the customary way of laying bricks eighteen motions were employed in laying a single brick, but eleven of these could be omitted altogether, and some of the others could be combined, so that the required motions were reduced to one and three-quarters. The material and the tools which the worker uses are often placed at a distance from his hands and not where he can get them with the least possible movement and expenditure of energy. A worker is often forced to stand at his work, when he might more economically sit. Stools are less efficient as labor savers than are chairs; and a chair should have an adjustable back. A high chair should be provided with an adjustable foot rest, especially with women workers. The rate of a factory machine run by power is usually set more or less arbitrarily and the worker is expected to conform to it, although his own neuromuscular rhythm, the rhythm at which he can do his best work, may be slower. Such conditions of work, while they may appear trivial, nevertheless, may cause needless muscular contractions,

¹ Frederick S. Lee. *The Human Machine and Industrial Efficiency*. p. 19-23, 45-8. Longmans, Green and Company. New York. 1918. Reprinted by permission.

needless and unwise expenditure of energy, and thus may add to the fatigue of the worker. Their avoidance is usually a simple matter.

Other environmental contributing causes of fatigue relate to illumination, ventilation, food, and various sanitary conditions.

Here may be mentioned lack of sufficient illumination, misplaced artificial lights, and location of workers and machines so as not to secure the full benefit of window lighting. Even when general illumination is sufficient a glare of light on the work bench or the material may be harmful.

Lack of proper ventilation is a frequent condition of unnecessary fatigue. The investigators of the Public Health Service have found that the different members of a group of workers on the same job frequently show similar variations in total strength; and the same is shown by different groups of workers who have different jobs but similar external environments. Such facts indicate that strength is affected by external influences, and the investigators have found that air temperatures of 85°F., or above, especially when maintained for several days, reduce the worker's strength. My colleague, Dr. Scott, and I have shown by a series of experiments on animals that the heat and humidity of the air diminish muscular power. At an average temperature of 69°F. (21°C.) and an average humidity of 52 per cent the total amount of work that could be performed by certain selected muscles before they were exhausted was regarded as 100 per cent; after the animals had been exposed for six hours to an "intermediate" condition of temperature of 75°F. (24°C.) and humidity of 70 per cent the total work possible fell to 85 per cent, and after a "high" of 91°F. (33°C.) and humidity of 90 per cent, the work dropped to 76 per cent. Not only a hot and humid but a still atmosphere is bad; the air of the working place should be reasonably cool, moderately dry, and kept in motion. An absolutely constant temperature is not so beneficial as one that is varied. The enervating effect of a high temperature may be much avoided by the use of electric fans. A purely artificial system of ventilation is probably never so efficient as one that makes use also of open windows, with their possibilities of playing upon the skin a variable air supply. Variety is one of the essentials of good ventilation.

Lack of adequate and properly selected and cooked food is a frequent obstacle to high productivity. The same may be said

of a lack of adequate bathing and toilet facilities. The time has gone by when these aids to cleanliness are to be considered as mere needless luxuries. If the human machine is to be in its best working condition it must be kept clean within and without.

While these causes of fatigue are secondary they are none the less real and their elimination conduces to the greater productivity of the human machine.

In order to preserve the working power daily fatigue should not be so great that it cannot be substantially removed by the night's rest; weekly fatigue ought likewise to be dispelled by the rest of Sunday. If this is not accomplished, if there is a residue of this powerful obstacle to efficiency accumulating from day to day and from week to week, serious results will surely follow. This was precisely the situation in the munitions industry of England. Sixteen months after the war began the British Health of Munitions Workers Committee wrote: "Taking the country as a whole the Committee are bound to record their impression that the munitions workers in general have been allowed to reach a state of reduced efficiency and lowered health which might have been avoided without reduction of output by attention to the details and weekly rests. And again, twenty-two months later, the Committee wrote: "The conditions are not the same now as they were in the early days of the war; not only have large numbers of the youngest and strongest workers been withdrawn for military service, but those who remain are suffering from the strain inseparable from a continuous period of long hours of employment. . . The effects of the strain may even have been already more serious than appears on the surface, for while it is possible to judge roughly the general condition of those working in the factory today, little information is available concerning the large number of workers who, for one reason or another, and often because they find the work too arduous, are continually giving up their job." This experience of England ought to serve as a lesson to other countries, and especially to America.

A particularly insidious way of nullifying the advantages of a short working-day that is not uncommon is the imposition of overtime, keeping the employee for an evening of work after the day's work is done. Here a peculiarity of the human ma-

chine is of interest. Mosso showed long ago that fatigue does not increase in arithmetical proportion to the increase in work done, but that added work imposed upon an already fatigued individual is disproportionately more fatiguing and requires a longer time for recuperation. Kent found that the keenness of the sight of industrial workers is diminished in a greater degree by a day with overtime, than by a day of the usual length. When overtime is imposed the further call upon the depressed tissues can, indeed, be answered for a while by further action—the human machine can spurt—but the more healthful occupation of the evening, in view of the work of the morrow, would be one of recreation and rest. If overtime is ever thought necessary, as in a real and serious emergency, it should be only occasional and should be followed by an added compensating resting period.

What is said of overtime applies with equal force to Sunday labor following six days' occupation. Here, again, the example of England is instructive. As a direct result of the study of industrial fatigue since the war began the British Committee puts it tersely in saying "It is almost a commonplace that seven days' labor only produces six days' output," and adds that in Great Britain "Sunday labor for men is now greatly restricted in amount and has been practically abolished for women and young persons."

A further matter of importance may here be mentioned. An observant visitor to the factories cannot fail to notice that he rarely sees old men or women among employees. This is so evident that the presence of an aged worker appears anomalous. There is a widespread opinion that forty-five represents the retiring age for most industrial workers. In an investigation of 1761 brass foundrymen in Chicago in 1911, Hayhurst found that there were but 17, or 0.97 per cent, over fifty years of age, and but 180, or 10.2 per cent, estimated at over forty years. The question immediately arises: What is responsible for the absence of workers beyond middle life; and the answer inevitably comes to mind that the rigor of the game incapacitates them at an age when human beings are expected still to be doing excellent work. If this is so, the accumulated fatigue of many years is the decisive factor. The remedy would appear to be a diminution in the hours of labor and the installation of other conditions not so severe for the human machine and conducive

to its longer usefulness. In a field in which accurate data are largely wanting and an intensive study is much needed, it is impossible to draw decisive conclusions, but the subject offers food for enticing speculation.

SOME GUIDING PURPOSES IN FATIGUE STUDIES¹

Efficiency engineers and psychologists are actively engaged in experimentation upon many other factors which may affect the worker and his output. One such form of experimentation is upon the effect of distraction (introduction of conflicting stimuli). In every business office or factory there are, of course, noises of machinery, typewriters, telephone conversations and the like. Morgan has shown that where the stimulating value of the problem is kept high, loss in the output from any function though distraction is very much less than is popularly supposed (although the subject exerts greater muscular effort, presses down harder upon the keys, etc.). It is well known that sudden noises and those infrequently met with have a disturbing effect on account of their tendency to arouse the fear reaction. Where the disturbances are regular the phenomenon of adaptation enters in and the worker ceases to be disturbed by extraneous stimuli. One of the most striking illustrations of this was observed in the Army. In the Air Personnel office when the force was small, typewriters had to be stopped when long-distance calls were answered. As the pressure of the work increased and as the office force trebled and quadrupled, it was no uncommon sight to see a man answering a long-distance telephone call with fifteen or twenty typewriters going in his immediate neighborhood and a hundred or more going in the one large room. Again, while experimentation over short periods of time may show that such stimuli are without immediate effect, it still seems safest to have offices and factories arranged so that the worker is as free as possible from extraneous disturbances. The wear and tear on the human organism is probably a positive thing even though temporary laboratory studies fail to give marked evidences of it.

¹ J. B. Watson. *Psychology from the Standpoint of a Behaviorist*. p. 379-81. J. B. Lippincott Company. Philadelphia. 1919.

Recently a large number of experiments have been made upon the most satisfactory systems of lighting. Indeed, there is now a well-organized society of illuminating engineers. There is general agreement that bright lights are disturbing and that evenness and uniformity in illumination rather than great intensity are the conditions to be striven for except in those cases where the task demands high intensity, as in drafting and the doing of fine work generally.

It seems that a general caution on all efficiency experimentation is not out of place here. In recent years there has been a constant tendency to turn to the study of man: the technic and machine sides of industry have been worked up to a point of maximum efficiency. Output if increased must come from a better understanding of man. Psychologists have aided and abetted industry in solving this problem. When the improved output comes from selecting the most suitable man for the task, from eliminating waste effort, improving training methods, and allowing recreation and proper periods of rest, such efforts are in the right direction. But the industries are undoubtedly abusing the situation. Every effort is being made, by the bonus system, appeal to loyalty, patriotism and pride, to grind as much out of the organism as possible in the shortest space of time. We would not stay the advance of efficiency engineering for a moment, but we would urge that every device for getting increased output from the worker should, before being recommended and adopted, be studied from the standpoint of its effect upon the total activity of the worker in popular terms, its effect upon his happiness and comfort.

STANDARD OBJECTIVES FOR REDUCTION OF FATIGUE¹

Closely bearing on the subject of the length of the working day, and intimately related to the economy in power production, is the question of fatigue. It would be without our province to discuss here the effects of "fatigue toxins" on the nervous system and vitality of workers; and many excellent researches have recently been made on the subject. The point of immediate import-

¹Walter N. Polakov. *Fatigue and Industrial Efficiency*. *Industrial Management*. December, 1919. p. 448-52.

ance is the ill effects of fatigue in industry, on society, and some means of its elimination. It has been pointed out by those studying the subject that the greatest proportion of occupational fatigue is of nervous origin. Mr. Charles S. Myers, Director of Cambridge Psychological Laboratory explained that, "The central nervous system (the brain and the spinal cord) acted as a protection against muscular fatigue, and it was only in the extremely strenuous work of comparatively few occupations that there was a serious degree of muscular fatigue." Indeed, when a person was actually fatigued, he might temporarily do far better muscular work than when he was not, for a certain status of fatigue produces a feeling of ability to work, though the work may fall very far short in quality if not in quantity. This fact is of great importance to power plant work, where the quality of work is of paramount importance, while quantity is economically of slight value. In cases of firemen attending hand-fired furnaces numerous tests are on record plainly indicating that as fatigue grows the ability of shoveling coal into the fire does not diminish, while the quality of combustion is getting steadily poorer as indicated by the number of pounds of steam produced per pound of coal.

In cases of mechanically stoked boilers physical fatigue plays a still more subordinate role, whereas that of nervous and mental origin obviously predominates. It is significant to note that the monotony of work in the fire rooms equipped with stokers, whose motions are hardly perceptible, where silence or monotonous humming is seldom broken, while the illumination is usually best adapted for slumbering meditation, has a most ruinous effect on economy. Feelings of weariness and fatigue arising from this deadening monotony make long hours for firemen not only nerve-wrecking but highly extravagant from the viewpoint of economy. While periodic rest and recreation may prevent a large turnover among firemen and a don't care spirit, means for dispelling the monotony are extremely valuable both from the standpoints of welfare and economy. The rule almost without exception that proportionally larger savings of fuel may be made in the mechanically stoked boiler rooms than in the hand fired ones is to be attributed principally to this fatigue-producing monotony. Installation of instruments, requests for log-keeping and brighter lighting alone show in the writer's experience a marked increase in economy, sometimes reaching

twelve per cent improvement in efficiency. Yet such measures alone cannot be depended upon to produce lasting effect, as they themselves, in course of time, will lose their stimulating value of novelty, and become familiar, monotonous adjuncts of the "old dirty hole." Intellectual awakening, training, competition, sporting spirit, bonuses and other forms of incentives are therefore producing as a rule favorable results, even when clumsy and unfit, yet if inaugurated with proper thoughtfulness, upon thorough analysis of all circumstances and in accordance with a far-sighted policy, these and similar measures are completely regenerating for the spirit.

Generalizations from a typical case or from individual, single-day tests, however interesting, are lacking the indications as to how the fatigue accumulates day by day during the week. Monday's chart shows undoubtedly a feeling of fatigue after Sunday's rest; while power demand is fairly steady and peaks are uniformly high in both morning and in the afternoon spells, they do not reach the same heights as on Tuesday when the feeling of realization of fatigue is somewhat worn off; the periods of high output during spells are noteworthy by their durations. On Wednesday morning the fatigue is not felt yet, but in the afternoon it begins to manifest itself by a steadily decreasing use of power. Thursday is a day when the industrial community becomes really tired; after short effort in the early morning the work drags fourteen to fifteen per cent less actively than on Tuesday. On Friday a supreme effort is made at the start of the day by tired men to work hard, but collapse follows at once and the output rapidly falls in an avalanche fashion to the lowest point on the record; Saturday morning finds men without any ambition left, no peaks to indicate any vestige of the morning spell, although fairly high, men probably being spurred by anticipation of the holiday, while some likely are rushing to finish their week's tasks.

The accumulative fatigue, so plainly evident from these graphs, is of the utmost importance: it seems to indicate that the seven-day week (traditional since Biblical times and suitable for occupations of that degree of civilization) is too long for our days of strenuous effort. But it also suggests a desirability of securing similar data for fifty-two weeks of the year showing the accumulation of fatigue throughout the year. Unfortunately, this kind of data is exceedingly difficult to secure because of

seasonal fluctuation of the amount of work, number of employees, climatic changes and numerous other interfering factors.

However, these wavy lines of fatigue and spells have a great deal more than academic value. By careful study of them the possibility of combating the ill-effect of fatigue on health, safety and productivity may be devised. In certain manual operations performed in power plants such as wheeling of coal, the intermittent work and rest periods were arranged after exhaustive tests with the result that men who were fatigued and ready to "fire the job" not wanting to "kill themselves" by wheeling in forty-five thousand pounds of coal in twelve hours, were made contented, and thought the job a "cinch" when, by following our instruction, they wheeled in sixty thousand to sixty-five thousand pounds in eight hours.

The reduction and general gradual elimination of fatigue through adequate rest and proper recreation, better adapted tools and surroundings of work, substitution of interest in work for monotony, etc., is the task of utmost importance from the viewpoint of national economy as it at once not only conserves the health of the nation and increases the productivity and well-being of the community but it materially conserves our fuel resources for posterity.

The task of engineers viewed in this light is this, to provide opportunities for leisure rather than to invent new yokes and tread mills.

XVIII. THE PATHOLOGY OF THE WORKER

The application of the principles of mental hygiene to industry is in its initial stages, and the time is not ripe to make hard and fast conclusions. It is not too early however to draw the attention of business executives to the practical progress that has already been made and to the main lines of development. The actual accomplishments thus far and the angle of approach to some of the most baffling industrial problems are sufficient to suggest the great contributions that may be expected steadily in the future from this source.

THE MENTAL HYGIENE OF INDUSTRY¹

Just as nobody would now think of denying the routine value of physicians and surgeons in industrial plants, so nobody can fail to note the good done by ordinary social workers in connection with industry. There is simply no dispute on either of these matters. To be sure, some managers may stress the *welfare* values of the doctor and the social worker, while other managers think of them as contributing to plant *efficiency*. But these are questions of the temperament of the managers, not of the nature of the results in the plants.

Now it requires no great refinement of viewpoint to see that, instead of a general practitioner of medicine, for some plant purposes (e.g., discharge, grievance, and certain turnover problems) a physician with psychiatrist training would serve far better. The psychiatrist is by training and experience a *specialist in grievances*; why is it not logical to apply this specialism to the grievances of industrial plants? On precisely the same grounds, the social worker with *psychiatric experience* is preferable to the general social worker for the purposes of

¹ E. E. Southard. The Mental Hygiene of Industry. Industrial Management. February, 1920. p. 101-4.

industry, if we can prove that a considerable number of the more difficult plant problems are psychiatric or have a psychiatric tinge.

For the present argument, may I take for granted that the values of psychiatric, social workers *outside of industry*, both in war work and in peace work, are generally admitted? To be sure, there may not be over two hundred trained and experienced psychiatric social workers in the country at the present writing; accordingly it is only where they do exist or have been at work that their values are even understood, much less questioned. But there is, so far as I am aware, no dissentient word anywhere about the results of these workers, where they are in evidence at all. . .

The problem of mental hygiene is wider than medicine and wider than the branch of medicine that deals with nervous and mental diseases. The problem touches mental and social sciences and arts of the greatest breadth. Yet the indispensable core of the problem may well turn out to be medical. I had the privilege, in the Spring of 1917, of many remarkable hours of consultation with the late Carleton Parker. He had, as everybody knows, come to a view of the great importance of the underlying ideas of mental disease and defect in the problem of industrial unrest. Every psychiatrist who appeared on the Pacific Coast was eagerly interviewed by Parker for what said psychiatrist might say on problems like those of temperament, monotony, fatigue and the like. It is a great wonder that an economist could have come independently to this point of view. Perhaps if more economists with thoroughly scientific training should live with the workmen as Carleton Parker did with the hoboes, the problem of hiring and firing, of promotion, of job selection, and in fact the entire problem of personnel, would get settled faster. . .

Miss Mary C. Jarrett, now working on this topic under the Engineering Foundation, published briefly certain studies of the psychopathic employee as a result of her Psychopathic Hospital work. . .

In a later paper Miss Jarrett has discussed what she has termed shell-shock analogues under civilian conditions. She says concerning the war neuroses themselves; "The considerations that strike the psychiatric social worker in this situation are, first, the desire that this new, widespread knowledge of

the neuroses that war is making prominent may be turned to the advantage and relief of civilians who suffer from similar troubles and receive inadequate consideration; second, that experience in the social care of civil cases of similar nature may be used to advantage in restoring soldiers suffering from shell-shock to normal social condition; third, that a thorough, intelligent public understanding of these disorders should be established against the day when the soldier who suffered shell-shock shall have again become a civilian, and the cause of his trouble may not be remembered acutely enough to arouse sympathy for symptoms that still persist."

She found that the analogues of shell-shock in civil life appeared frequently at the Psychopathic Hospital. The range of exciting causes was from trivial incidents, such as a quarrel or reprimand, to a profound shock, such as an accident in which the patient is severely injured and a companion killed. She found another feature of the situation, which the layman cannot readily understand, namely, that the severity of the symptoms is not at all proportionate to the size or apparent importance of the cause. Treatment, however, must be relative to the gravity of the disease and not to the nature of the particular strain or shock which induced the condition. She narrates cases in detail to show first certain failures in social treatment which come about through lack of medical resources and inability to compel treatment, secondly, cases of pronounced success obtained by comparatively slight service, such as advice to the family or finding the patient a suitable position, and thirdly, cases in which results were only obtained with the most intensive social care.

These cases included a failure to cure a perfectly curable neurosis, in an Italian laborer simply because medical facilities were not available in his home town and he could not be brought to a central clinic; cases of character change following accident, cases of amnesia, and the like. Some of these cases might seem to run far afield from industry, but Miss Jarrett was able to find important connections between these cases and a variety of employment situations with the net result in many instances of complete adjustment. Something like half the cases of social work in mental hygiene clinics, such as that of the Psychopathic Hospital in Boston, will be found to throw light on various aspects of the employment problem.

Readers of engineering journals are familiar with turnover analyses in which sizeable lists of the causes of discharge and unemployment are to be found. Jau Don Ball gives certain methods of examination which he has used, in his own phrase, "as scientific aids to industrial efficiency." It would be equally true to say that Ball's methods and those of others engaged in this work are also practical aids to industrial welfare. Efficiency experts and welfare workers can unite in this mental hygiene program. Ball gives the following list of persons that might especially come under examination, *queer guys, eccentrics, disturbers, querulous persons, unreliable and unstable fellows, misfits, the irritable, the sullen, socially disgruntled, unsociable, negative, conscientious, litigious, bear-a-grudge, peculiar, glad-hand, gossipy, roving, restless, malicious, lying, swindling, sex pervert, false accuser, abnormal suggestibility and mental twist types.* . . .

Ball described the analysis of certain employees in a firm where two months after Ball's examination a strike occurred. Ball states that "in the case of every employee terminated for the group examination whether discharge or voluntarily leaving, the prediction of a possible abnormal conduct or a dissatisfaction was made in the laboratory report and recommendations to the employer." And further, "according to the records, everyone of the strikers had something wrong with them from a nervous or mental standpoint (nearly all having a psychopathic history); it was noted that with three exceptions the 'strikers' cited as agitators were among those grading the highest on the intelligence scale used." The intelligence scale used was a selection of tests made by Dr. A. W. Stearns during his naval work on the Pacific Coast, as examiner of recruits. Stearns promises early publication of his work, of which an advance account was given at a meeting of the National Association of Psychiatrists.

Of course no mental hygienist, least of all Drs. Ball and Stearns, would assert that all or many strikes could be prevented by advance studies of workmen. In fact Ball specifically says that "it could not be concluded from this or any other examination that all strikers, whether agitators or not, are psychopaths; but his examination does show that the agitators in this group were the self-assertive ones and the ones grading the *highest*

in intelligence, the others simply followed the leader. Nobody needs to say that there are not strikes having purely economic causes. Nobody needs to say that there are not strikes and other labor troubles due to mental disease or character defect either in the employment managers and minor executives or in the plant owners themselves. Some of the very conditions which make for self-assertiveness and success of a sort among labor leaders are conditions which make for the success of financial magnates and captains of industry. Nobody claims one hundred per cent efficiency for any of these or kindred proposals.

REPORT OF THE ENGINEERING FOUNDATION¹

In industry, also, therefore, mental hygiene would apply to: first, a small but potentially important group of mentally diseased employees; second, a large group of individuals whose mental character is such as to require special consideration, possibly nearly half of the working force; third, the largest group of workers, possibly a little over half, who have no appreciable mental difficulties and whose problem is chiefly to develop their mental ability. The practical situation divides itself into three propositions which present themselves in the form of questions: (1) Does industrial organization call for attention to individual mental characteristics? (2) Can the mental sciences give practical help in dealing with minds in every day action? (3) Is it feasible to use mental science in industrial organization? There would be few found today to deny the first question. The second has been answered affirmatively in innumerable instances and places, and the answer can readily be found by anyone who can take time to gather the evidence. Psychiatry and psychology have already advanced far enough to make contributions to mental hygiene, that are of great practical value. Propositions one and two may be said to be proved. The time has come to work upon proposition number three.

The inquiry into this subject undertaken by Dr. Southard

¹ M. C. Jarrett. Massachusetts State Psychiatric Institute. A report of work done in collaboration with Dr. E. E. Southard in an investigation for the Engineering Foundation. Reprinted from The National Conference of Social Work. 1920. p. 336-42.

for the Engineering Foundation was the outcome of some work begun at the Psychopathic Hospital in Boston in 1914. When I went there to develop its social service in 1913, I found at once that many of our patients who were started on an industrial decline were competent and even excellent workmen, and that with a little assistance in adapting themselves to their employment and an explanation of their condition to their employers, they could be refitted into industry. This led to the idea that similar methods of understanding and assistance might keep other employees from falling into the condition of hospital patients, and further to the thought that mental hygiene, necessary for the psychopathic employee, would also be beneficial to all persons in employment, to the end of promoting their efficiency and personal satisfaction.

There was no lack of evidence, in my visits to industrial plants, that psychopathic employees were a recognized problem. Usually the cases cited were among the best workmen, and a problem was how to keep them at work. It will be of interest to list some of the instances that were told to me, and also some of the opinions expressed. The following cases are selected to mention:

1. Man who thought he could not do his job, and was found to be worrying about the headaches of his wife, also an employee. When given assurance that his wife would be transferred to a position more favorable to her health, he made good.

2. Girl who would get "fussed" over her work and finally have a hysterical fit—the doctor found she had a sex obsession. She was a good worker. She is now considered one of the best workers and one of the nicest girls in the plant.

3. Girl who could concentrate only until an early hour of the afternoon. Every few weeks she would get wild and leave her work, saying she could not stand it another moment. Her problem was solved by putting her on two different jobs changing her work every day at noon.

4. Man who feels "bum" all the time and is one of the best workers.

5. Foreman who asked to have his wife visited. His wife, he said, was "nervous." It was found that the man himself was so nervous that his wife thought he had changed very much in the last few years. She said that he cried in his sleep and

that he complained of the conditions of his work although he was absorbingly interested in it. He is a strong, healthy looking man. He was very suspicious of direction and would not accept an assistant foreman. The failure to break in an assistant would mean loss to the company if this man should become incapacitated.

6. Girl with hysteria, cause of which was found to be the serious illness of an intimate girl friend.

7. Case of traumatic neurosis in which permanent paralysis resulted after a useless operation upon the hand.

8. Man with back curved after a slight accident, from which no physical injury remains.

9. Man who occasionally stops work to sing and preach; suddenly stops, and with a laugh goes back to work.

10. Young man several years in army service who was mute for a month after a shell explosion; now shows hesitation in speech and is slow in manner. Although he has made good at machine work, he feels shaky. He thinks he feels worse and wants to be transferred to office work.

11. Man who had "shell shock" in the army who seems peculiar and does not do satisfactory work.

12. Superintendent who has no use for women. Carries this to such an extent that women employees cannot consult him.

13. Stenographer who is a fairly competent worker but seems dull and makes mistakes. Employment manager feels that there is something wrong with her.

14. Man laid off in slack season after fifteen years of employment, has such an unfavorable reputation that it will be hard for him to find another job. Talks continually, is suspicious, thinks everybody is against him, and has given some reason to question his honesty.

15. Over-busy girl who is a fine worker. When allowance for her peculiarities was made she proved to be very useful.

16. Man who prided himself upon expert knowledge by which he could revolutionize industry. He wrote various letters denouncing all who opposed him. Once he was the leader of a small group of workmen.

17. Very capable "normal" girl who made unusual mistakes in her typewriting for several days and then had an attack of hysteria. After a few days at home she seemed all right.

18. Foreman, a high-strung man, in whose department all the employees seem tense and irritable.

19. Man who ran up and down the shop with a bucket of molten metal. He was committed to a hospital for mental diseases.

20. Morose, surly Italian discharged for drawing a razor upon a fellow employee. This man had a record of having been employed by the same firm seven times within three years. The reasons for leaving were as follows: refused to do work; did not show up; not satisfied; dissatisfied; left without notice; dissatisfied with earnings; discharged. He seems to have done about the same grade of work throughout and not to have shown mental deterioration.

21. Colored laborer who would dress up once or twice a month on Saturday in white trousers, frock coat, and silk hat and walk up and down the main street of the works. On that day he would not report for work, but otherwise was a satisfactory employee.

22. Good worker, employed for twenty years, has a belief that there is an electric current in his body pulling him from side to side. Once in a while he comes to the superintendent to talk about his condition. Apart from this delusion he is "quite normal." He gets along well with his mates and has not fallen down in his work.

23. Foreman who went to pieces six months after being promoted from the bench. He became excitable and was irritable when spoken to by his men and would sit and cry in the superintendent's office. After two weeks of such behavior he was sent away for several weeks and seemed all right on his return. When put at his former work he was quite competent.

* * *

Some of the opinions expressed in regard to the importance of mental factors in industrial organizations:

12. An employment manager said he would like to have mental hygiene talks for his foremen, realizing that almost everyone has some wrong mental processes that stand in the way of his being positively constructive.

13. The director of industrial relations department in an extensive industry said that employers now realize that temperament is a factor in industry, and are aware of the importance

of allowing for different temperaments; but they do not yet recognize that these temperamental differences can be evaluated and dealt with successfully by medical experts. It will be necessary to demonstrate that temperamental peculiarities are due to fairly well understood mental processes.

14. A trade unionist thought that the labor leaders are beginning to realize the possibilities of a combination between science and industry. He thought that an experiment in the application of psychiatry, to industry would do more than anything else to convince the labor unions that the trend in industry is already toward individualization of the employee and that if psychiatry can contribute to that, it will be doing an important service.

15. The head of an industrial service department in a large plant had listed as part of his program for the coming year the education of department heads in mental hygiene. He said he hoped to teach them to recognize and deal intelligently with mental deficiency and with mental disorder. . .

In the future, results should be sought through practical measures to supply in particular plants proof of what psychiatry has to contribute to personnel problems. Such practical measures are the mental hygiene working party to survey a plant, the consulting psychiatrist, and the psychiatric social worker connected with the personnel service. Many studies could be made within the plants for the purpose of indicating the value of such measures, but the emphasis should be upon an actual trial on a large scale of methods already proved to be of value in individual cases. Application of what is already known will not only yield immediate practical results, but will also be the shortest road to further knowledge.

The difficulties of practical application may loom large. One manufacturer who was kind enough to list for us the objections that might be raised by industrialists was able to set down seventeen typewritten pages of possible objections. They can all be met by trial but probably not by argument.

The objection in the foreground is that large industrial firms employing thousands cannot give attention to the individual employee. This is a problem of organization which is tersely put by Dr. Otto P. Geier when he says, "While it is advisable to think in terms of the mass, it is even more important to act in terms of the individual." Another industrial manager facing

the difficulty squarely says, "The mistaken idea that a workshop becomes so large that it is impossible to deal with the individual is doing tremendous damage today. Does a firm ever get so large that it cannot deal individually with its customers? If it is possible to deal and make individual adjustments with customers, why should it not be less difficult to deal with the employee individually? Just as the circumstances surrounding the purchase of the customer must be different, so are the capabilities, class of work, personalities, etc., of the individual worker incapable of satisfactory mass adjustment."

The terminology of medical science is a minor cause of prejudice in the industrial field. But workers who have familiarized themselves with the almost unbelievable names attached to some of the machines and materials used in manufacturing industries will not hesitate long before accepting such easily acquired terms as "psychiatry," "paranoia," and "cyclothymia." Even "hypophrenia" and "pseudologia" may come in time to replace the harsher terms of "stupidity" and "lying!"

The fear that the recognition of mental disorder will discredit the worker may act as a deterrent to the movement. Big mental diseases cannot be concealed, but it is customary to ignore the little bits of mental disorder that stand to mental disease about as a cold in the head stands to pneumonia. Yet these little mental troubles often impair efficiency and happiness more in the long run than a severe attack of some disorder. Most of us would rather have an attack of pneumonia than a chronic cold in the head. It is thought that the worker will be alarmed at the idea of attributing his difficulties to disease or to innate weakness. It has not been found difficult in individual cases dealt with in hospitals to reconcile employees to the idea that their difficulties have recognized causes. In fact, as a rule they welcome the idea, as it is a relief to them to know that there are means to help. In one plant visited, the head of the medical department thought of beginning a mental hygiene program with the executive force where turnover was lower and intelligence higher. The best argument with the worker of the value of mental hygiene methods will be the increased satisfaction of individual employees who take advantage of them. In relation to one mental disorder, feeble-mindedness, it has been proved and generally accepted that the worker profits by recognition of his mental condition. Individual

consideration for the feeble-minded has led to better realization of their productive capacity and has tended to increase the productivity of this class.

Gradually all points of view from which industry is studied—economics, medicine, engineering, labor, capital—are coming to a focus upon the basic fact that production rests upon the mind. Mental power is the greatest force in the world, and it is still to be studied from the standpoint of industrial production. The beginning made by the Engineering Foundation is full of promise.

DEFICIENCIES OF CHARACTER AMONG EMPLOYEES¹

The most striking feature of the problem of the psychopathic employee is the general ignorance of its existence. When an effort was being made by the Social Service of the Psychopathic Hospital to secure private support for a study of this subject, some fifteen employers who were visited almost without exception stated confidently that they had no such persons as our patients in their employ. While they expressed interest in the project as a good cause in helping such unfortunate persons to be self-supporting, they could not see that the subject had anything to do with their business. If a person suffered from mental disease, he seemed to them an object of benevolence. One employer who was interested enough to make a contribution of money, begged that his firm should not be asked to employ our patients. Shortly after, the employment manager of this firm hired a man who was described to him as having had an attack of confusion and excitement, during which he prayed aloud on the street and was brought to our hospital where his mind had become entirely clear. He was engaged to do work for which he had references of proficiency. This incident is a crude sketch of the present situation, the employment managers and foremen adapting themselves in a rough and ready fashion to conditions as they find them, and attributing symptoms of mental disorder to "a difference of temperament," as one foreman put it; while the members of the firm and the executive

¹ M. C. Jarrett. *The Psychopathic Employee: A Problem of Industry.* Medicine and Surgery. September, 1917. p. 727.

force are unaware that there is any mental disease in the shop. . .

In the Final Report of the Commission on Industrial Relations, under causes of unemployment, among "conditions determining the worker's ability to grasp or retain the opportunity to be employed which industry offers," are cited "those personal factors, such as dishonesty, laziness, intemperance, irregularity, shiftlessness, and stupidity, which are commonly included under the term 'deficiencies of character'." That these characteristics are to a considerable extent symptoms of mental defect and mental disorder cannot be doubted.

Among the reasons for discharge that appear on the record cards of one firm in Boston are the following: causing trouble about the work; not steady; incompetent; tardiness; slackness; poor attendance and indolence; drinking to excess; fainting spells; troublesome; not wholly reliable as a man, but a good fireman; constant disagreement with foreman; quarrelsome; assault. A conference with several of the foremen of this firm recently brought out the pains that they take to deal with the peculiarities of the employees under them. The superintendent asked one of the foremen if he would have had the patience to keep a certain quarrelsome man if he had known that he was a patient from the Psychopathic Hospital. He replied, "My patience works the other way. I want to give every man a chance. And he does his work all right." This man had just received a raise in pay. He is a case of general paresis, a man who had been a street car conductor. His foreman said that he and the other men in the shop explained the patient's peculiarities on the supposition that he took "dope," because on some days he was more excitable than at other times. Another employee was described as having "a temper like a meat-axe, but when he's calm he's one of the best workers I've got. I never saw a fellow get as angry as he does—you couldn't hold him with a chain." These two instances illustrate the adjustment the foreman may be able to make without special instruction, but another case that was told indicates the possibility of failure. This man also did his work well, but "he thought everybody was talking about him, and we were afraid we wouldn't get rid of him before he had done some harm."

One wonders what happened in the next shop where he worked. . .

There are some evident conclusions that stand out in our experience. In most of these cases inebriety is a prominent factor, since the habit of alcoholism is an easy channel for these unstable temperaments. Alcoholism in these cases may be regarded as one of the symptoms of a psychopathic constitution. Its effect in turn is to exaggerate the original defect. Withdrawal of alcohol increases the patient's chances of social adjustment, but alcohol is by no means the only stumbling block. Family discord is a large factor both as cause and effect; and in treatment the cooperation and intelligent understanding of the family are essential. Economically it is a distinct gain if a psychopathic patient who was in process of industrial decline can be self-supporting and competent for the greater part of the time, even if he has an occasional attack. One of our patients employed as an expert chemist was about to be discharged three and a half years ago as hopeless after an alcoholic attack of psychopathic nature; but when the man's condition was explained to the firm, they gladly retained him, saying that they could afford to allow him occasional leave of absence, if necessary, for the special value of his work. He was in the hospital again once six months later, but for the last three years has worked steadily. This case illustrates both the economic value to society of keeping competent but psychopathic individuals employed, and also the possible value to industry. A firm that discharged one of their best salesmen after an attack of maniac-depressive insanity lost an asset. The patient has not had another attack since, now four years, and has been competent in every way. He was safer for the firm than ever before in the six years they had employed him; for, instructed in the nature of his disease, they could have gotten him to the hospital at the earliest signs of an attack, and by early treatment possibly could have decreased the duration of the attack. In general we find employers quite willing to employ patients whose mental condition and industrial efficiency are frankly described, and to retain them as long as they are able to do the work. Understood by their employers, and taught to understand themselves, psychopathic individuals who would otherwise be thrown out of industry, may keep their places as efficient employees.

A REASONABLE APPLICATION OF PSYCHIATRY TO INDUSTRY¹

A lucid statement as to what seems to be a reasonable application of psychiatry to industrial hygiene under the present limited understanding of this branch of medicine, combined with the limitations imposed upon its practice by industrial conditions, is presented by Dr. Stanley Cobb, neuropsychiatrist in industrial hygiene of the Harvard Medical School, in the *Journal of Industrial Hygiene*.

Dr. Cobb believes that much of the chaos in industry today is due to the unhealthy mental condition of the workers, and that this unhealthy condition is only the natural consequence of long endurance of an environment which ignores the fundamental needs of human nature and thus represses normal emotional and mental expression. He considers it no exaggeration to agree with Carleton Parker in saying that "Modern labor unrest has a basis more psychopathological than psychological, and it seems accurate to describe modern industry as mentally insanitary."

Stated in non-technical language, the practical usefulness of industrial psychiatry lies in the study of the individual worker and his environment. . . A hypothetical case is cited of what is commonly known as "nervous breakdown" in a department store employee, which might have been prevented by a half hour interview of an intelligent psychiatrist leading to a little material assistance and a simple readjustment of the woman's personal problem. Such cases, variously called "neurasthenia," "psychasthenia," and "psychoneurosis" are common in wards and dispensaries, it is stated, where the doctors do little for them, the need being for an investigation and readjustment of the patients' personal problems. These conditions and need for this kind of treatment are found not only among people positively ill, but among the restless, inefficient, and the radical elements of society. "A striking number of the histories (Army cases) showed that in civil life these men drifted from one employment to another, never breaking down enough to consult a physician,

¹ Abstract printed in *Monthly Labor Review*. Vol 10, 1920. p. 226-9. From original article by Dr. Cobb in *Journal of Industrial Hygiene*. November, 1919. p. 343-7.

but adding their number to the shifting, inefficient labor element so costly to employers. It took the rigor of army life, with no possibility of escape by moving on, to bring out their symptoms. Before these people have left their work or have been fired for inefficiency, they should be interviewed by someone competent to understand them and their personal troubles. At such times, advice from a physician, the loan of some money, a visit to a sick child or wife, or any of the thousand possible personal and individual aids, might save the worker from becoming soured, keep him from joining the ranks of the discontented, and prevent the development of a litigant and paranoid personality. . ."

When the instincts for self-assertion, creation, and excitement are suppressed through the workings of the present industrial system the result is an abnormal frame of mind which is evidenced in striking, drinking, etc., unless some outlet for the workers' energies is provided. This whole field is so large, however, that Dr. Cobb believes the average industrial physician will be satisfied to watch for and treat sympathetically the psychotic symptoms as they appear in individuals.

In regard to the claims made as to the value of mental tests of applicants for industrial positions, he believes that they are some use from the point of view mainly of determining sub-normal individuals, although they are of service in reducing misfits in shops—a condition conducive to mental breakdowns.

While mental fatigue has received much attention from psychiatrists, Dr. Cobb thinks that overwork is not the fundamental cause of neuroses or psychoneuroses, but that these are fundamentally emotional breakdowns. Although the symptoms are similar to those of neuromuscular fatigue, this is cured by simple rest, which is not the case in the nervous diseases under discussion.

"Work that represses emotional cravings often brings out neuroses, just as satisfactory work is the greatest curative agent we have for these conditions. Let us no longer fool ourselves into thinking that overwork, per se, is the cause of mental breakdown."

✓ The problems of industrial psychiatry, therefore, summed up briefly are: Prevention of mental breakdowns by giving the worker the proper environment and removing causes of discontent, and treating such cases from an individual standpoint, as well as considering as psychiatric cases those persons who,

until recently, have been given such unsympathetic names as "the groucher," "the kicker," "the troublemaker," and "the hobo."

A reasonable application of psychiatry to industry under present conditions would seem to be as follows:

1. Physical examination of all applicants for work.
2. Mental examination by (a) a period of training and observation, or (b) thorough mental tests.
3. Keeping in personal touch with employees by means of (a) good foremen, (b) a system for watching individual efficiency, or (c) a sympathetic staff with a psychiatric point of view in the employment management office, thus salvaging the men who might otherwise be fired.
4. Training the industrial physicians to a knowledge of how human nature is constituted, not in conventional terms, but in the light of a dynamic and living psychology that considers the behavior of human beings in terms of instinctive sources of energy, integrated into motives, these motives needing outlet through energy transformation into satisfactory activity.

UNDERSTANDING INDUSTRIAL MISFITS¹

It seems clear, therefore, that the only possible way to attack this problem is by . . . the psychiatric method. This method presupposes that human conduct, like conduct or behavior observed anywhere in the organic world, is dependent upon fundamental reactions. These reactions may be combined into complex forms which may baffle analysis. Above all, one should note that the fundamental concept of organic activity requires the participation of at least two forces more or less directly opposed. This opposition of forces is continuous or intermittent, and, in perfect repose, is in equilibrium. . . The emotions are associated with the conscious mind, but also more fundamentally with other functions of the body, so that an emotion may be evoked by other than psychic disturbance. The mental content will be correctly associated with this, except in complete dementia. Ordinarily, emotional impulses are well correlated with conscious mental processes, so that on the receipt of unpleasant news and in the face of a pleasant experience the

¹ Herman P. Adler. Unemployment and Personality. *Mental Hygiene*. January, 1917. p. 16-24.

corresponding emotions are experienced. On the other hand, emotional impulses may arise from causes outside of the mind, outside even of the subconscious mind in the meaning of the psychoanalytical school. Thus, for instance, one may wake up in the morning feeling depressed. This may be due to purely physical causes and need not be necessarily due to supposed complexes, as Sigmund Freud maintains. The work of Dr. Cannon at the Harvard Medical School on the role of the ductless glands in pain, hunger, fear and rage has shown at least one way in which this may occur. When such an emotional impulse is aroused, the whole human being resists it. He tries to free himself from it as soon as possible, and does so by many devices, such as following his routine occupations, interesting himself in his work, seeking distraction by conversation with interesting, stimulating persons; but, whatever he may do to relieve the emotional tension, he does not allow it to affect his conduct in any serious way. His inhibition, his judgment, whatever it is that he uses, is sufficient to oppose these tendencies up to a certain point. There is, however, a threshold above which he can no longer inhibit. If the stimulus is strong enough, therefore, the individual would not be able to resist. Just where this threshold or this breaking strain lies has to be determined in each individual.

Normal individuals show a certain range of variation in this respect. In fact, a single individual may at different times show a variation, but ordinarily these variations are within comparatively narrow limits, so narrow that it has been possible to construct a huge code of laws which without great injustice fits practically all the normal members of the community. When this threshold varies, however, beyond these limits, then conduct results which is sufficiently outside of the normal limits to call for attention. It is very important, however, to realize that such variations, while they may be fundamental, congenital, and even more or less fixed, are not absolutely fixed and permanent. Were this so, the problem of dealing with the deviates would be greatly simplified. Then it would be merely a matter of rounding them up and either executing them or at least segregating them. The difficulty in the management of delinquency is caused chiefly by the fact that individuals vary somewhat in their ability to fit into the existing community and that, therefore, an appearance is created that their misdeeds are intentional, and that the best

remedy is to teach them the stern lessons of reality by making them suffer for their acts.

This method has failed all along the line, and nowhere more than in the treatment of unemployment. . .

✓ As a first step, therefore, in determining what could be done in the way of corrective education, it is necessary to determine the exact nature of the individual in question in regard to his ability to learn. } To do this we have analyzed one hundred cases in such a way as to group all the patients under three headings. The headings indicate in a very schematic way our opinion as to their character or personality. The first of the three classifications is the paranoid personality. Under this heading are grouped all individuals who have shown by their conduct that their reaction to the world is entirely egocentric. No matter what they experience, no matter what they desire, their own ego is in the centre of the plot and dominates everything. This may be associated with a variety of emotional reactions so that the resulting picture is a varied one. It included individuals who are convinced of their own ability. They are always ready to undertake new schemes, they are usually working for the betterment of the rest of the world and claim all sorts of altruistic motives, and even may be altruistic to some extent, seeking merely the satisfaction of being in the limelight. Or the emotion may be a depressed one and the individuals are contentious, surly, suspicious, claim abuse, ill-treatment, recognize no kindness that is done them, appreciate no favors, etc. This by far the largest group in our table, comprising forty-three cases, or almost half.

The next largest group, which we call inadequate personality, comprises cases which show evidence in their conduct of a lack of judgment, a lack of intelligence. Under this heading are placed all cases which have been shown by the psychological tests to be defective or feeble-minded, or those suffering from a deteriorating disease other than maniac-depressive insanity or the paranoid psychoses.

Finally, we have a third group, which we called the emotionally unstable group. Under this heading we have included all the cases that show sufficient mental ability and judgment to satisfy the ordinary demands of life and who have no marked tendency to the egocentric attitude or to enlarge upon their own significance, accomplishments, or the jealousies of others. These

include individuals who show excessive emotional reactions, who at times are buoyant beyond all reason, and while in this condition show considerable psychomotor activity. Their minds are very active, they have many new ideas, they have a marvelous imagination, they undertake a dozen different obligations, none of which they can carry out. They tire of one thing before it is half begun and go rapidly to another. In another mood, the equivalent of a depression, the more pronounced cases may show a slowing up of the mental activity, an interference with thought, a lack of initiative, a tendency to be unhappy, a brooding disposition. This group of individuals also often exhibit violent outbursts of temper. They are extremely irascible, usually on account of some external provocation. The latter may be very slight. The reaction, however, is always extremely violent. Impulsiveness, amounting often to obsession, is frequently found in these cases. Throughout these changes, whether they are hypomaniacal or depressed, they assume an attitude toward the rest of the community which is that of more or less self-effacement and modesty. The normal individual reacts to another in a friendly fashion if he considers him modest. Every politician knows this and uses little tricks in order to show how unassuming and democratic he is. Universally detested, on the other hand, is the person who appears to be conceited and arrogant, who has an idea of self-importance. A behavioristic distinction may roughly be applied to these cases: that the paranoid personality is one with which we may sympathize, but dislike; the emotionally unstable individual, on the other hand, is one that may be extremely annoying to have about, that causes untold trouble, not to say misery, and yet that is very likable.

With this in mind, it is not surprising that the emotionally unstable group contains only twenty-two cases. The inadequate group, on the other hand, contains thirty-five cases. The inadequate and paranoid together, therefore, form 78 per cent of the cases studied. It is not likely that these figures represent the conditions in the community at large, possibly for the reason that in the first place an emotionally unstable individual in the hypomaniacal condition is a very useful citizen and is not likely to get into difficulties unless his trouble becomes more intense. Also, on account of the fact that these people are all very popular, their friends and acquaintances will gather about them in times of need and will by united efforts keep them "on the

job." With the paranoid individual this is not so. The paranoid individual gets into difficulties and one is glad to get rid of him, if possible. Where his abilities are such that the employers do not like to let him go, the other employees sooner or later will force them to dismiss him. Furthermore, the paranoid individual will throw up his job on his own accord where there seems no adequate reason for the step.

It is interesting to consider the reasons for the unemployment in our cases. The patient was asked to state his reason for leaving and then the employer, wherever possible, was seen and his statement was taken. While these data have not yet been completely analyzed, the following points have been made. It seems that with the paranoid individuals the reasons stated by the patient are identical with those of the employer forty-four times out of one hundred thirty-four cases, or thirty-three per cent. In the cases grouped under the heading inadequate the patient's and employer's accounts agree twenty-nine times out of ninety-five cases or thirty-one per cent. In the emotionally unstable group the patient's and employer's reasons are the same eighteen times out of forty-nine, or thirty-seven per cent—a percentage slightly higher than in the previous groups. . .

The only conclusions that we may allow ourselves at present on the basis of this material are as follows:

1. There are individuals in the community who for a variety of reasons are not able to regulate their conduct on the basis of experience. One of the difficulties that such individuals get into is unemployment. The result of their unemployment brings hardships on themselves and on their dependents.

2. While some of these individuals show defects of such a severe nature that they may be regarded as hopeless and, therefore, can be segregated, there are others in whom the deviation from the normal is not sufficient to make them incapable of supporting themselves at all times and it is unwise to segregate them and prohibitively expensive.

3. From our analysis it appears that there are two types of individuals that experience these difficulties. One type, which is grouped under the headings of inadequate and paranoid, is afflicted with certain characteristics of personality which are not amenable to treatment. To maintain these people in the community it is necessary to modify the environment so far as

possible in order to prevent, in the first place, the calling out of their peculiar reactions and, furthermore, to prevent their suffering the results of their acts; in other words, to keep a man "on the job" in spite of his personal unpopularity or inadequacy. The other type, grouped under the heading of emotionally unstable, suffers from the results of temperament. These individuals are subject to variation of temperament and the treatment of their unemployment must be guided by a knowledge of their tendencies so that environment on the one hand can be suitably influenced or chosen for them, and that the individuals themselves may be trained to counteract their impulses to some extent.

PSYCHOLOGICAL PHASES OF INDUSTRIAL MISBEHAVIOR¹

Among the great primary instincts which provide the opposing forces responsible for mental conflict a dominant place must be assigned to "herd instinct." It has been explained in Chapter X. that a vast part of the beliefs and conduct of man is due to the operation of this instinct. From it the tendencies generally ascribed to tradition and to education derive most of their power. It provides the mechanism by which the ethical code belonging to a particular class is enforced upon each individual member of that class, so that the latter is instinctively impelled to think and to act in the manner which the code prescribes. That is to say, a line of conduct upon which the herd has set its sanction acquires all the characters of an instinctive action, although this line of conduct may have no rational basis, may run counter to the dictates of experience, and may be in direct opposition to the tendencies generated by the other primary instincts. This opposition to other primary instincts is well exemplified in the case of sex, where the impulses due to the latter are constantly balked and controlled by the opposing tendencies arising from the moral education and tradition.

It will be immediately obvious that in these struggles between the primary instincts and the beliefs and codes enforced by the operation of herd instinct we have a fertile field for the development of mental conflict. The factors involved each possess an

¹ Bernard Hart. *The Psychology of Insanity*. p. 90-2. G. P. Putnam's Sons. New York, and London. 1914.

enormous emotional force, and we should, therefore, expect that their opposition would produce a plentiful crop of the abnormal mental phenomena described in the preceding chapters of this book. Trotter, who has fully developed the subject in the papers to which we have already frequently referred, has pointed out the immense significance which the conflict between primitive instinct and herd tradition possesses for the human mind. He remarks that the manifestations of mental disintegration thereby produced "are coming to be recognized over a larger and larger field, and in a great variety of phenomena. . . This field includes a part of insanity, how much we cannot even guess, but certainly a very large part; it includes the group of conditions described as functional diseases of the nervous system, and, finally, it includes that vast group of the mentally unstable which, while difficult to define without detailed consideration, is sufficiently precise in the knowledge of all to be recognizable as extremely large."

In the last chapter we have described several cases in which the outbreak of insanity depended upon the existence of a conflict between the dominating complexes of the mind and the circumstances in which the individual was compelled to live. It was shown that the abnormal phenomena finally produced could be regarded as biological reactions whose purpose was to provide a way of escape from the strain of this intolerable struggle. The individual found a refuge in dissociation, and retired into an imaginary world where the complexes attained a delusional fulfillment, while all the mental processes incompatible with this imaginary world were shut out of the field of consciousness. Now in cases of this type it is interesting to note that among the processes thus excluded from effectual participation in consciousness are to be found almost all the tendencies due to the operation of herd instinct. The patients have lost the gregarious attributes of the normal man, and the sanctions of traditional conduct have no longer any significance for them. In the milder cases this change shows itself merely as a loss of interest in the affairs of their fellows, a tendency to be solitary and unsociable, an atrophy of their affections for friends and relatives, and an indifference to the ordinary conventions of society. In the advanced cases the change is much more marked, and the mind is completely withdrawn from participation in the life of the herd. The code of conduct

imposed by convention and traditions no longer regulates the patient's behaviour, and he becomes slovenly, filthy, degraded, and shameless. In this picture, to which so many chronic lunatics conform, may be recognized the absolute negation of herd instinct and of the vast group of mental activities which arise therefrom.

MENTAL CONFLICTS AND MISCONDUCT ¹

The term *mental conflict* represents an idea that is not at all difficult to understand. Few would question the existence of such a phenomenon. Technical discussion hardly makes the concept any stronger, and, yet, perhaps some attempt at definition is desirable in order that there may be no misunderstanding whatever about what is meant. A mental conflict, then, is a conflict between elements of mental life, and occurs when two elements, or systems of elements, are out of harmony with each other. This is the barest possible statement. Why do mental elements in the same individual become conflicting? This question leads us, in turn, to consider other mental mechanisms.

Memories or ideational elements forming the content of our mental storehouses are largely constellated; on account of the activity of various laws of association mental elements are so related to each other that there is a bond between them. The particular form of a constellation is the result of the special grouping or linking together of perceptive experiences or of their reproductions as they arise in the mind. A *constellation* of ideas is thus a system of mental elements having some special relationship of the elements to each other.

We must next consider the *complex*, the theory of which is at the heart of the psychoanalytic method; this according to our own findings in mental analysis represents a vitally important subject. Various authors have sketched their conceptions of a mental complex, particularly as they have taken or modified the idea from Freud, who develops such an extensive psychological superstructure upon this foundation. (There is no doubt that the concept of a mental complex existed long before Freud's day, albeit with little consideration of the

¹ William Healy. *Mental Conflicts and Misconduct*. p. 22-8. Little, Brown and Company. Boston. 1917.

phenomenon and no attention to practical applications.) We may gather from all these writers that a complex is a constellation of mental elements permeated with a vigorous emotional tone, a system or association of ideas grouped about an emotional core or center. The existence of such peculiarly disposed constellated systems no one can doubt; how important they are for us as students of misconduct will appear many times to our readers.

The complex has other essential characteristics. Being possessed of an emotional tone it has energy-producing powers; by reason of this it may be, and often is, a great determiner of thoughts and actions. This is merely following the general law that emotion-tinged portions of the mental content are the dynamic elements of mental life. And it also appears that only parts of complexes active as producers of behavior appear in consciousness. This is proved by the fact that a very distinct effort or exploration is necessary to bring any such entire system of ideas into view.

Discovery that portions of an active complex are left in the mental background as subconscious led to study of the phenomenon known as *repression*. When a mental experience, or group of thoughts with an emotional tone, or part of such a constellated system of ideas, is pushed back, "put out of mind," "forgotten," it is said to be repressed. This seeking oblivion for an experience may be more or less of an automatic, hardly conscious reaction, perhaps directly dictated by naturally falling in line with social conformities, either family or general, or it may be a thoroughly deliberate attempt to get rid of something conceived as undesirable.

Here we are brought sharply up against the question of whether there can be any real "forgetting" and "putting out of mind." Above all, we know that anything once experienced as mental content is subject to being stored. And it is a matter of everyday knowledge that the storage places of the mind contain many things that the conscious self is not aware of, either in detail or as being stored. No one has had a keener insight into the nature and importance of memory processes than the philosopher Bergson, and our own appreciation of this side of mental life may well be served by quoting from him a paragraph that must have caught the eye of many students of mental analysis. Speaking of memory he says, "And as the past grows without

ceasing, so also there is no limit to its preservation. . . In reality, the past is preserved by itself automatically. In its entirety, probably, it follows us every instant; all that we have felt, thought, and willed from our earliest infancy is there, leaning over the present which is about to join it, pressing against the portals of consciousness that would fain leave it outside. The cerebral mechanism is arranged just so as to drive back into the unconscious almost the whole of this past, and to admit beyond the threshold only that which can cast light on the present situation or further the action now being prepared. . . Doubtless we think with only a small part of our past, but it is with our entire past, including the original bent of our soul, that we desire, will, and act. Our past, then, as a whole is made manifest to us in its impulse; it is felt in the form of tendency, although a small part of it only is known in the form of idea." From these words we get a picture of mental life that is peculiarly valuable as a background upon which some fundamental conceptions of mental analysis in relation to misconduct may be developed. . .

Subconscious mental life, which is one of the main concerns of dynamic psychology, although hardly mentioned by name in many textbooks of psychology, requires from us some discussion concerning certain points of special import. (I hold no brief for the term *subconscious* as opposed to or distinct from the meaning of the word *unconscious*, which is sometimes used in this connection, but it does seem more serviceable, since the latter, as applied to mental processes, seems to offer a contradiction in terms. As might be expected in a newly developed science, words have been utilized that have meanings attached not altogether suitable for subsequent finer discriminations). The subconscious part of the mind may be defined in its widest significance as that portion of mental life which, at least for the time being, is outside the general field of attention. Of course, the only proof of the existence of this background of mind material is the fact that on occasion portions of it are presented above the threshold of consciousness, namely, in the field of attention. Now, part of what is subconscious may be voluntarily recalled, with small or with greater difficulty. Some of it only makes itself known by involuntarily flashing or jumping into consciousness. Still other portions, in order to get above the threshold of conscious thought, need the use of

artifices, such as hypnotism, hypnoidal states, or the free association methods, or require directive insistence on closely tracing associations for special memories. That an enormous number of past experiences cannot be voluntarily remembered is undoubtedly true. In the storehouse of the subconscious mind some of the material is near the portals of easy exit, some material is far off in dark nooks and crannies, far from the doorway and the light of conscious thought.

Particularly well conserved in subconsciousness, as I have already stated, are mental experiences or groups of mental elements which are stored away accompanied by a strong emotional tone. This is a matter of common-sense observation with all of us. These special constellations are peculiarly the ones of which parts flash up into the field of attention, and which cause substitutive reactions of various sorts. The most virile of these complexes are those in which the original emotion or "affect" was powerfully repressed, totally unreacted to, strangled. The strength of a complex as a producer of unusual and abnormal mental, physical, or social behavior is not measured by the length of time since it was repressed. Neither is its force to be judged by the fact of easy recognition or of complete disguise of any part which appears at the surface of consciousness, nor by the comparative difficulties experienced in pulling the complex up to the surface to be seen and known for what it is.

XIX. CONTRIBUTIONS OF ABNORMAL PSYCHOLOGY TO BUSINESS PROBLEMS

RELATION OF ABNORMAL PSYCHOLOGY TO EVERYDAY LIFE ¹

The flood of light thrown upon the workings of the human mind by the discoveries and the resulting conceptions of modern psychopathologists has illuminated the mental mechanism, not only of the hysteric and the madman, but of the normal human being. It is clear beyond all possibility of doubt or cavil that the mental factors which produce the characteristic behavior of the neurotic and the lunatic are at work in the "normal" mind and give rise to many well-known traits of "normal" behavior as to behavior and conduct which we may not care to call "normal," but which falls short of anything for which the help of a physician would be sought. Much of the modern work in psychopathology has in fact a most direct and intimate bearing on the everyday life of us all, and on every human problem.

. . . The modern study of psychopathology, the greatest advances in which we owe to Janet, Freud and Jung, has brought to light a great mass of data and some fundamentally important conceptions of the highest value to psychology, and these have given the impulse to a new development of psychological theory. The most important general conclusion reached is that the abnormal activities of the mind, as seen in cases of hysteria and insanity, are but extreme and unbalanced developments of characteristics and functions which form integral parts of the normal healthy mind. On the basis of this conclusion we are able to interpret many of the most baffling phenomena of the normal mind in the light of these pathological developments, and thus to obtain a far deeper insight into mental structure and functions, in just the same way that pathological developments of the tissues and functions of the body throw light upon normal

¹ A G. Tansley. *The New Psychology*. p. 5, 13-14. Dodd, Mead and Company. New York. 1920.

physiological processes. In both cases the reactions to extreme stimuli, the behavior of the organism when it loses the normal balanced adaptation of parts to one another and to the environment which characterizes healthy life, do not differ in kind, but only in degree from reactions to normal stimuli and from normal behavior. Both classes of reaction and behavior—the normal and the abnormal—are conditioned absolutely by the original structure and capacities of the organism. When the reaction and behavior are extreme, we are presented, as it were, with an analysis of the normal functions; we are able to study the deranged function more or less in isolation, and to get an idea of its real meaning and character which we cannot get when it is kept in check by the opposing tendencies which ordinarily maintain the balance of the whole organism.

The new psychology, then, looks upon the human mind as a highly developed organism, intimately adapted, as regards its most fundamental traits, to the needs of its possessor, built up and elaborated during a long course of evolution in constant relation to those needs, but often showing the most striking want of adaptation and adjustment to the rapidly developed and rapidly changing demands of modern civilized life. Its most fundamental activities are non-rational and largely unconscious activities. The power of conscious reasoning is a later development, playing but a minor part, even in the most highly developed human being, on the surface, so to speak, of the firmly built edifice of instincts, emotions, and desires, which form the main structure of the mental organism. In many cases the apparent importance of rational activity is seen to be illusory, forming as it were a mere cloak for the action of deep-seated instincts and desires.

THE INDUSTRIAL COST OF SUBNORMAL AND ABNORMAL EMPLOYEES¹

CASE 3. Young man, thirty years old, of Irish-American parents. . .

He has kept an elaborate work record from 1910 to 1919,

¹M. J. Powers. Mental Hygiene Committee, State Charities Aid Association, New York. Report in Proceedings of National Conference of Social Work. 1920. p. 344-6.

showing one hundred twenty-three jobs, the year in which he held them, the city, type of work, name of employer, wages received, length of employment, and whether he was discharged or left voluntarily. Most of these positions have been verified and the statistics which they present are of especial interest to the problem under discussion. The one hundred twenty-three jobs represent one hundred three different firms for whom he worked and thirty-three different occupations which he followed. His longest period at any one job was eight months, his shortest period of work being one day, with an average of twelve and a half days spent at each. He worked a total number of 1,545 days for the time covered, or about one day out of every two. He was eighty times discharged, resigned twenty times, and nineteen of the positions were temporary work. His total earnings for the ten years were \$3,316.21.

The kinds of work which the patient did can be grouped under three main headings, jobs as laborer, of which there were thirty, clerical positions thirty-two, and jobs as semi-skilled worker, where proficiency is obtained after a few months' experience, thirty-three. Satisfactory estimates or studies of the cost of breaking in men are very scarce. Those which are available have been made by personnel managers and the experts connected with certain industries and are more in the nature of roughly assumed estimates than scientific statistical studies. Using a scale which is considered conservative as a basis for computing the cost of the labor turnover for this one individual, his cost of hiring can be estimated at \$47.50, cost of training \$960, wear and tear \$392, reduced production \$1,879, or a total of \$3,608.50, a sum which exceeds his earnings by about \$300. If we estimate the normal earnings of a man of this class at \$1,200 per year, then the total wages which he should have received for this time, or \$12,000, must be added to the foregoing in calculating his cost to society. The statistics used here do not include the cost of rehiring by the same firm. This occurred twelve times, mostly in cases of newspaper press rooms where the night work afforded him lodging.

Such efficiency methods as have been used in the past take care of only normal individuals, but the so-called normal workers make up only a certain percentage of the labor supply. The psychopathic employee is not sufficiently normal to fit into efficiency methods nor is he subnormal or abnormal enough to be

committed to an institution. Hence he is forced into a life of wandering which eventually works to his own detriment, and that of society. Receiving no help toward a more successful handling of his difficulties, he repeats his experience with an endless number of positions to the great cost of productive labor and capital. The case just cited shows clearly the extent of waste in present methods of handling such people. This man only earned \$3,316.21 in the past ten years; the rest of the time he has lived upon the contributions made by charitably inclined persons who were moved to pity by his hard-luck stories, or else by social agencies. When these were not sufficient, he resorted to grafting, panhandling, borrowing, etc. His waste to industry is shown by the fact that his earnings were less than the cost of labor turnover. And his cost to society is much greater than the cost of maintaining him in a state hospital for the entire period.

Such cases as the foregoing are illustrative of the psychopathic employee. It is not possible to estimate at present the exact percentage of labor constituted by such individuals, but that they make an appreciable number is certain. One industrial organization which is beginning to appreciate the existence of the problem, recently expressed the opinion that they feared to open a psychiatric clinic for fear of being swamped.

Since such individuals exist in such large numbers, some plan must be created to make use of them. This can only be done through education of the public generally, as well as employers and employment managers specifically, in the understanding of human nature from a psychiatric view point. Such a program must necessarily be slow, since the ignorance and prejudice of the public at large is one of the greatest factors in the problem. Society's own resistance to an insight into its own make-up leads it to treat as mysterious and dangerous all mental abnormalities. That the correction of society's state of mind is one of the tasks of mental hygiene is self-evident.

It is not necessary, however, to await the general awakening on the part of the public at large before undertaking more practical measures to deal with the employment problems of the psychopathic worker. There are already in existence a number of excellent courses which train workers in the recognition of mental symptoms, something of their causation, and the means of assisting such individuals toward social and vocational adjust-

ment. Psychometric tests are of value and mark a decided step in advance, but since they do not take into account the emotional nor personality factors in the situation they are not a solution of the problem. In order to identify the psychopath in industry and effectively utilize him, each employment department should have on its staff at least one person who has been trained to recognize and handle such individuals, not alone for the purpose of placing him at work but of securing an adjustment to that work which will insure his maximum of productivity to industry and of satisfaction to himself. The cost of training one member of the staff of each employment department in mental hygiene principles is infinitesimal compared to the money wasted in allowing present methods to continue.

The United States Commissioner of Labor Statistics has said that unemployment, although not yet recognized as an industrial accident, nevertheless causes more slowing down of production, demoralization and suffering than all other industrial mishaps. Among the various causes of unemployment he mentions the lack of a properly balanced organization of industry, lack of an intelligent employment policy for hiring and handling men, failure to gain the good-will of employees, failure to make use of the tremendous latent force lying dormant in the workers. Each one of these causes has a special significance to those who earnestly believe that in scientific inquiry and in more understanding of the needs and creative possibilities of the psychopathic states in human nature lies an effective weapon for striking at the roots of the current unrest.

SOME MAJOR TYPES OF MALADJUSTMENT¹

We shall describe in a few words the twelve types of misfits mentioned, in order to make plain the problem and the need.

First, the apparently unambitious employee, who refuses the opportunity to advance, tho apparently capable of advancement. Is this employee really unambitious, or is he simply modest and afraid to assume responsibility? Again, is he really capable of advancement or only apparently so? Dr. Southard tells us of many cases in his experience that showed that, where respon-

¹ Frank B. Gilbreth and Lillian M. Gilbreth. *Independent*. June 12, 1920. 102:355, 376.

sibility was *forced* upon those who unwillingly assumed it, the individual upon whom it was imposed often could not rise to that which the new work demanded of him. On the other hand, we have not, in our experience, many cases in the industries that show that, when a person has been gradually given more responsibility, and has been properly trained to assume it in accordance with our standard practice of the Three Position Plan of Promotion, the results are not satisfactory. Often what has seemed to be lack of ambition turns out to be timidity, over-conscientiousness, or a feeling of unpreparedness for the new duties.

Who is to decide whether the employee is right in declining advancement, or whether the manager is right in urging certain placement? Only an expert in diagnosing and understanding states of mind and analyzing causes and results of experience can make an adequate decision.

Second, the inquisitive employee, with an exaggerated curiosity incapable of sustained attention, who is apparently bored by standardized methods, and refuses to try them. Such curiosity shows itself in many ways, the distraction of attention if anyone passes through the room, or at the slightest new happening or even new noise, or if the desk of the foreman or other person in charge is in a location behind the worker while at work.

The dislike of standardization and everything pertaining to it may show itself in a decided tendency never to do things twice alike. We have met cases where this applied even to so simple and elementary a matter as the form of checking mark used in checking off items on a list. The attitude of the worker toward the principle and practice of standardization is one of the most interesting and valuable tests of fitness and of need of special training. Sometimes this aversion to or hatred of standardization is conscious. Sometimes it is a misguided conception of the relation between standardization and monotony. Very often it is unconscious, and the worker seems to find it impossible to do anything twice alike. We have had cases where inability to do work twice the same way was the first indication we noticed of a mental defect that was later recognized as insanity.

Perhaps no one thing will do so much to interfere with one's progress, yet in most cases can be cured so easily, as an aversion

to or lack of habits of standardization of methods in small as well as large things. Demonstration of the benefits of standardization and its relation to the one best way to do work and teaching of efficient methods will show whether there is anything seriously wrong with the worker or not.

Third, the worker who is constantly making valueless suggestions and inventions, or inventions downward in the path of cumulative improvement. This type is apt to tire even of his own inventions, as soon as they are made, to such an extent that he is loath even to "try them out" himself, as he often has a new invention, or at least a change, ready to suggest before his previous suggestion is even tried. His interest lies not at all in the result of improvement embodied in the suggestion or improvement, but simply in a desire to make changes from accepted standards, and in many cases he cares little or nothing for any changes with *which his name as suggester is not identified*. This type is very common. It is by no means confined to those occupying humbler positions. It often includes a type high up, and particularly those thought of as "System Pests." One will realize how numerous are those of this type when one is engaged in installing management and finds how many people will suggest changes and new methods before they understand the method being installed, which is the "design from practice."

Fourth, the ambitious employee with a strong desire for a specific job, for which he apparently is not suited. This type is very common, and our own experience has been that if a desire is *strong enough*, the worker will, in a surprising number of cases, overcome the apparent unsuitability, and will usually make good at the work he specially desires. It may be that he is therein gratifying a "suppressed desire." This is for the psychiatrist to find out. Countless examples of this type can be found among the crippled, and the number who have made good in spite of their apparent unsuitability has taught the manager and the psychiatrist that they must use the utmost care in making their decisions, as they may themselves be the ones who prevent the apparently unsuitable from fitting for his *best opportunity*. A safe rule to remember is that the man who has sufficient desire for a specific job, and who is willing to utilize his spare time in studying and fitting himself to fill it, will almost always make good at whatever he sets his heart on.

Fifth, the young in years, who have apparently stopped

learning. To stop learning is the great tragedy of life. If the psychiatrist does nothing but discover why this type stopped learning, he will have done a wonderful piece of work for the individual involved and for industry as a whole. We hear of blind alley jobs. These are usually misunderstood. *A blind alley job is not so frequently one that has no apparent line of promotion as one that makes it easy to stop learning.* How shall this mental inertia be overcome? That is for the psychiatrist to say.

Sixth, the restless, nomadic type who wants to "go somewhere," though given high wages and as good a chance for advancement as he could expect. Here we have the typical "floater," capable and desirable from the employer's standpoint, but dissatisfied with any fixed occupation and always sure that his real opportunity lies in some other place. Possible advances in pay or promotion seem to have little or no effect upon this type. It seems as natural for this type to float as for birds to go south every winter.

The type is not new. History has long recorded the wanderings of the journeyman, the gypsy, the tramp, the tourist, the explorer and the pioneer. The younger one is, and the less responsibility one has, the stronger this fundamental "go somewhere" instinct is. We all have it in some degree. But in the case of many of this type it is so strong and its call is so imperative that it interferes with progress, since the desire for travel has no definite industrial, vocational or promotion aim in view, and is not gratified for the sake of acquiring valuable experience.

Seventh, the "fixed idea" group, with immovable ideas concerning capital, labor, employer, foreman, other workers, etc. These differ from those who have stopped learning in that they have very definite ideas on many subjects that prevent or postpone the revision of ideas and the acquiring of additional knowledge. This type is often fond of arguing, but no matter upon what subject they speak, are sure to arrive at one of their fixed ideas. They hold themselves impervious to new ideas. Unfortunately these fixed ideas are often extremely radical, and the worker may become dangerous to himself, to his family, to the industry and to the entire community.

Eighth, the type who refuse to take advantage of "safety first," and who think that it is smart to disobey or defy or evade rules for the practice of safety. These are not limited

to the young, although recklessness is usually thought to be a characteristic of youth. In the days when "safety first" was new, and recklessness was fashionable, it was more or less excusable. The man who did "safety first" stunts to amuse himself and his fellow workers, was looked upon as a "regular feller," as "good company" and as a man "not scared of anything." Today, when "safety first" is an established part of job and shop routine, and when recklessness is no longer fashionable or desirable, there is no excuse for it. However, the type still remains, and is at present a menace.

Ninth, the self centered type, who refuses to recognize the social side or to cooperate either with fellow workers or with the employer. This is a type which brings much more suffering to itself than to others, and is one of the types to which the attention of the psychiatrist can be immediately directed with profit. It seems obvious that there is something decidedly wrong here, which is causing much unhappiness, and which the success of the psychiatrist in treating similar types out of industry, leads one to believe can be easily helped.

Tenth, the timid, or over-fearful type, who dread even remote and improbable accidents from being struck by lightning to falling down stairs. Industry itself is doing much to help this type, by provisions for and evidences of safety, provisions for health and hygiene, by a definite plan for promotion and satisfying advancement, and by otherwise eliminating causes of possible fears. In the extreme of this type, however, there is found constant fear of things that are never likely to happen, and it is this type of fear with which the psychiatrist must cope.

Eleventh, the indecisive type, who waver and hesitate over the simplest decision. In industry we cope with this type by so standardizing the work that the required decisions of their work cycles can be reduced in number, separated and individually explained, and their proper handling taught. It is, however, a slow and difficult problem to advance the indecisive type far without carefully planned methods of adjustment.

Twelfth, the over-decisive type, who are carried away quickly by a partial knowledge of an idea, but who have little power to evaluate evidence as distinguished from testimony, and no regard for the value of actual measurement in guiding decisions. These have some relationship to the self-centered, but are in many ways very different. The "fixed idea" people may have come to their ideas slowly. These over-decisive people rush

into things without proper deliberation. They are the type that makes the ideal mailing list for promotion of fraudulent advertising, and are the most intolerable in religion, politics, and matters pertaining to fraternal orders and secret societies.

As has been said, these twelve types are by no means the only such types to be found in industry. Neither must it be thought that these types are always in the extreme forms that we have outlined here. Nor, again, must it be thought that such types are receiving no attention at present, for in fact managers are doing their best in many cases to understand and advance them, and many cases now are under the care of psychiatrists, but not through industry itself. What we are pleading for is the discovery and treatment of such types in the early stages, through the initiative of industry.

It must be apparent, as the late Carleton Parker so clearly realized and said, that the underlying cause of industrial inefficiency lies in instincts that have been suppressed or diverted. Most of those who propose remedies for industrial unrest have this in mind, though they cannot or do not always make this clear. Any successful remedy must have it in mind.

SHELL SHOCK AND ITS LESSONS¹

It is an axiom in medicine that correct diagnosis is the indispensable preliminary to the rational and intelligent treatment of disease. This fundamental principle is universally recognized in dealing with bodily affections; but it is the primary object of this book to insist that it is equally necessary to observe the same principle in the case of mental illness.

It may seem ironical to stress this elementary consideration, but it is notorious that accurate diagnosis is too often ignored in cases of incipient mental disturbance. It is idle to pretend that such a procedure is unnecessary, or to urge in extenuation of the failure to search for causes that many patients recover under the influence of nothing more than rest, quiet, and ample diet.

Many mild cases of illness, whether bodily or mental, may and do recover even if undiagnosed or untreated. But on the

¹ G. Elliot Smith and T. H. Pear. *Shell Shock and Its Lessons*. p. 47-52. Longmans, Green and Company. New York. 1917. Reprinted by permission.

other hand many mild cases get worse; and it is the primary duty of the physician correctly to diagnose the nature of the trouble and to give a prognosis—to decide whether the illness is mild or severe. Some of the most serious cases of incipient mental trouble are those of patients who do not seem to be really ill, and are easily overlooked by a visiting physician. They are quiet and inoffensive and display no obvious signs of the insidious processes that are at work in them. But all the time they may be, and often are, brooding over some grievance or moral conflict, worrying about their feelings, misinterpreting them and gradually systematizing these misunderstandings until they become set as definite delusions or hallucinations. If, acting on the belief that it is bad to talk about a patient's worries, the physician leaves such a man alone, he is clearly neglecting his obvious duty. For the trouble may be due to some trivial misunderstanding which he could easily correct.

In the severer forms of mental disease, precise diagnosis is even more intimately related to treatment than in the case of bodily illness. For when a patient's illness is recognized as some bodily affliction, such as pneumonia or appendicitis, certain general lines of treatment are laid down as soon as the appropriate label has been found for the complaint, though, in the case of the latter illness, there is added the further problem of whether or not surgical interference is indicated.

In cases of mental disturbance, however, the general lines of treatment cannot thus arbitrarily be determined merely by finding an appropriate label. It is true that as in the treatment of bodily disease, certain general principles must be observed, such as the provision of abundant and suitable food, and the protection of the patient from all disturbing influences. But the essence of the mentally afflicted patient's trouble is some particular form of anxiety or worry which is individual and personal. The aim of the diagnosis, therefore, should be not merely to determine the appropriate generic label for the affliction, but rather to discover the particular circumstances which have given rise to the present state. The special object of the physician should be to remove or nullify the exciting cause of the disturbance; and in order to do this it is essential that he should discover the precise nature of the trouble. The diagnosis, therefore, must be of a different nature from that demanded in case of physical illness, where the condition may be ade-

quately defined by some such generic term as "lobar pneumonia" or "acute appendicitis," and its gravity estimated by the general condition and physique of the patient. In the case of mental trouble, the physician has to make an individual diagnosis, based not only upon an insight into the personality but also into the particular anxieties of each patient.

But even when it is recognized that exact diagnosis of the particular circumstances of each individual patient is essential, if the trouble is to be treated rationally and with insight, there still remain many difficult problems as to procedure.

Amongst those whom experience has convinced of the efficacy of psychology treatment for this class of case, there are indications of a divergence of opinion in the matter of procedure. Some believe that it is sufficient if the medical man has discovered the real cause of the trouble and explained it to the patient. Other workers look upon a preliminary psychical examination merely as a means of diagnosis, the unveiling of the hidden cause of the trouble; and consider that the treatment should be the laborious and often lengthy process of re-educating the patient, and so restoring to him the proper control of himself. It is of the utmost importance to emphasize the undoubted fact that those who maintain either of these views to the exclusion of the other are committing a grievous and dangerous error, for there is no sharp line of demarcation between the two procedures.

A sensible and intelligent man, once the cause of his trouble has been made clear to him, may be competent to continue to cure himself, and completely to conquer the cause of his undoing. But the duller and stupider man may need a daily demonstration and renewal of confidence before he begins to make progress. It is precisely analogous to the experience of every teacher of a class of students; the brilliant man will seize hold of a principle at once and learn to apply it without further help, whereas the dull man needs repeated and concrete demonstrations before it sinks into his understanding.

The Therapeutic Value of Work

It should be unnecessary to emphasize the desirability of preventing the neurasthenic from dwelling upon his subjective troubles by occupying his mind with other things. This end may often be achieved by the provision of suitable occupation,

and where possible, for many obvious reasons, this occupation should take the form of useful work. The worker then feels that he is not a mere burden upon the hospital which is treating him: the institution in its turn benefits materially. But it is necessary to sound a note of warning against the indiscriminate prescription of work as a panacea. First of all it should be certain that the work is of such a kind as really to interest the patient and to occupy his mind. There are many varieties of work, especially of manual labour, which can be performed mechanically, and do not succeed in distracting the attention from worries and anxieties. But more important even than this is the consideration that there are some mental troubles from which no form of work will distract the patient. . .

To suppose that the mere physical fatigue induced by a day's hard work will banish all forms of insomnia betrays an ignorance of one of the most important causes of this malady; viz., mental conflict. It is well known the bodily fatigue in the case of a mentally excited patient may merely increase his unrest at night.

A CONDENSED ANALYSIS OF PSYCHOLOGICAL MECHANISM¹

The major purpose is to set forth certain of the newly discovered mechanisms, the unconscious, the censor displacement, projection, compensation, the use of symbols and rationalization, which have been developed by Freud, Jung, Ferenczi, Adler, Abraham, Pfister, Blueler, Jones, Brill, Frink and others, and to show how the instincts function through them, and how these mechanisms offer an explanation of the social behaviour called the economic motivation. In so brief a paper it will not be possible to define these concepts very fully, however desirable it may seem in dealing with such strange concepts and discoveries. I shall define the concepts in a few words and then give a few illustrations, not claiming in any case that the proof is developed in the paper. To develop a proof of a particular illustration often requires many pages or even a book. In the extensive literature are many cases of scientific treatment and

¹ William F. Ogburn. *American Economic Review*. Vol. 9. Sup. 1. March, 1919. p. 299-301.

proof. Some of my audience may not be familiar with the general background and material, and to these I will say that my experience in such events has been that some of the illustrations inevitably have seemed unconvincing, but a further reading of the literature usually makes them appear convincing. It may also be that those who have been accustomed to dealing with subjects of such high dignity as state craft, trade relations of nations, or general economic conditions, will find that illustrations concerning sex and the behaviour of nervous women seem quite trivial. In anticipation, it may seem desirable to state that it is quite necessary to draw illustrations from these subjects, because such has been the field of research which has developed them. And as to their triviality, such an attitude is unwarranted, just as much so as to consider monographs on the earthworm or the amoeba as being trivial. These psychologists are engaged in the important task of working out cures for insanity and in curing cases of nervousness, which are increasing at such a rapid rate in our modern life. They are concerned with the very real problem of lessening human misery and bringing happiness, and bid fair to do it just as truly as will be done by the increase of material possessions or the extension of political liberty. Indeed, the discoveries of Freud have many times been claimed to be as significant as the discovery of the theory of evolution by Darwin and Wallace.

While many of the illustrations are from abnormal personalities, it is very important to remember that the psychologically insane are considered to differ from the normal only in degree, and that therefore the study of insanity is analogous to the use of the microscope in the laboratory.

THE UNCONSCIOUS. A great many of our desires are unconscious. They function in such a manner that we are unconscious of their real nature. Many of these desires cannot be brought to consciousness without the aid and assistance of someone else. Some desires, though forgotten, do not die, but live on in an unconscious state. A vast amount of human behaviour is occasioned by unconscious motives. In some cases a series of repressed desires integrate into a sort of subconscious personality.

That unconscious desires may exist, is seen in cases of double or multiple personality of the "Dr. Jekyll and Mr. Hyde" type. The case of the Reverend Ansel Bourse, cited by Hart, and Janet's Irene are cases in point, as are the cases studied by Prince.

Dream analysis, as developed by Freud, furnishes abundant evidence of the unconscious, as most of the dream material comes from the unconscious state. Another illustration, mentioned by Frink, is that of a man who was exceptionally violent in railing against all manifestations of authority. The exceptional nature of his reaction was shown upon analysis to be due to a repressed feeling against a very dominating and authoritative parent; the repressed feeling, though long forgotten, had lived on in the unconscious since early childhood, and manifested itself in an exceptional rebellion against various forms of authority. The love of a woman for a pet lap dog is often the manifestation of a repressed, and, perhaps, unconscious, desire for children. These illustrations all bear evidence of a body of desires in the unconscious state. The fact that so many of our desires come from the unconscious, has been the occasion of comparing the process of their functioning to that of a magnet placed under a paper, upon which are placed iron tacks. The tacks move when the magnet is moved, but the magnet, the force which causes the tacks to move, is not visible.

REPRESSION. Many of the desires of the unconscious are there because they are *repressed* from the field of consciousness. They are repressed because of mental conflicts. In a particular case there is a conflict between perhaps two sets of desires, one of which may be antisocial, and the other may be highly in accord with the best moral tradition. This mental conflict causes pain and perhaps a loss of mental energy. Such a state of affairs is intolerable to the personality, and the mind acts usually according to what is called the pleasure principle, that is, it must find its pleasure in relief. The result will probably be that the antisocial desire will be repressed into the unconscious, in which it continues to live though forgotten. Much forgetting is therefore purposeful. The particular repressing agency is sometimes called the "censor" or "censure." Thus, professional jealousy is sometimes so successfully repressed that one does not admit to himself its existence. Similarly, humiliating experiences, which are painful to remember, are forgotten, as has been often noted in unsuccessful love affairs which involve loss to one's hopes and ambitions, or one's self-respect. In these cases, if there was not repression and forgetting, the persons would suffer greatly from the pain of the mental conflict. The case of Irene, previously referred to, although of a pathological nature, shows very

clearly the phenomenon of repression. This young woman nursed during a long illness, her mother, to whom she was exceptionally devoted, and with whom her future was quite bound up. The mother finally died, under very trying and impressive circumstances. But for days at a time, afterward, the daughter seemed to be utterly unaware that her mother was dead. Then suddenly, perhaps during a conversation with friends, she would become transformed as it were, and reenact with consummate histrionic skill the scene at her mother's death bed, living it over in minute detail, all during which she would be oblivious to her surroundings. She would not hear, for instance, remarks addressed to her. In this case the thought of her mother's being dead was so unbearable that she repressed the whole complex from her mind, and most successfully, but the repression was not perfect, and suddenly the repressed material would come to consciousness and result in reenacting the deathbed scenes. Where conflicts are acute and intolerable, and the repression inadequate, the mind cannot stand the strain and insanity results. This analysis of the cause of the psychological insanity is described by Jung, in his analysis of a maniacal type, the archaeologist from the University of B——. Repressions of a minor scale go on through our daily life. Periods of very great repression occur in late childhood. Such desires as sex, pugnacity, or selfishness are often repressed; the repressing agency is usually the desires that accord with popular moral sanction.

THE DISGUISED ACTIVITY OF UNCONSCIOUS DESIRES. These repressed unconscious desires, though forgotten, do not die, but live on, and they endeavor to escape the repression. Thus, the force which repressed them in the first instance must continually keep watch lest these repressed desires break out into consciousness and express themselves. The "censor" acts, therefore, as if continually on guard. This "censorship" is not always successful, for many of the desires escape. This they do by disguising themselves, very much as a Mexican revolutionist who wants to buy ammunition may cross the border, disguised as a peasant working woman. The effectiveness of the disguises of repressed instincts explains why psychologists were not fully aware of them until the researches of the psycho-analyst appeared, and the illustrations which authors cite of these disguised desires seem so unsound, on first impression, for the very reason that the disguise is effective. These disguises which our motives

assume are the central feature of this paper, because of the thesis that the economic motives of history are disguised. A number of such disguises, therefore, will be presented in detail, to show their astounding ingenuity, their very great prevalence, and the ease and skill with which the human mind can perform these remarkable feats.

DISPLACEMENT. A repressed desire may escape the censor by displacing the true objective of the desire by a substitution. Thus Freud tells of a patient who was irresistibly compelled to examine the number of every bank note that came under her observation. She knew the act to be foolish, yet she could not help doing it, and suffered acutely because of this compulsion. Upon analysis it was found that she had suffered from an unrequited love affair. The conflict and pain which arose caused her to banish the painful chapter from her life, and she forgot. The repression was successful, but the compulsion neurosis appeared. Further analysis showed that a bank note played a significant part in this love chapter. So that although she repressed the desire, it was never dead, and made a partial escape through a displacement on to the bank note. This account and explanation appear very strange. Yet, that such explanations are true accounts, seems to be indicated by the fact that cases are cured after an unmasking of the disguise. A number of such strange and morbid compulsions have been similarly analyzed. A more ordinary illustration from normal behaviours, is that of affectation in dress or gait. Much affectation in dress is unconscious, as to the motive or particular desire expressed. One's egotism thus conceals itself in order to get by the censor, through a displacement upon the development of a peculiar mannerism. The term displacement is applied usually to displacement of words or word-ideas, chiefly in connection with dream analysis and such mental behaviour as wit, yet the term is being more widely used to cover a displacement on to another kind of activity in such a manner as to conceal the true motive. Thus, Frink claims a child with a strong exhibitionist tendency may in later life make an actor on the stage. The exhibitionist tendency, being incompatible with current morals, is repressed in late childhood, and later finds an outlet through a displacement in histrionic activities. Similarly, Freud advances the idea, in his brilliant study of Leonardo da Vinci, that Leonardo's great scientific interest was a sublimated sexual curiosity of

childhood. Some of the disguises here called displacement are truly marvelous, and certainly at first hardly believable.

SYMBOLISM. The use of symbols as a disguise is a type of displacement, yet so prevalent as to deserve especial mention. How an emotion will in great strength become concentrated upon a symbol as an objective, is readily seen in love keepsakes, or in a national emblem, like a flag. There is, of course, in these two illustrations, little of a disguise of the emotion, except that in any moment of response to a symbol, the great, full knowledge of the emotion cannot, of course, be in consciousness. Many symbols, however, are complete disguises. Thus clinical analyses have demonstrated the almost universal prevalence of certain sex symbols, such as the snake, the sword, and horseback riding. I cannot here explain how these are sex symbols, but I only wish to state that all students of psycho-analysis agree that these are sexual disguises.

PROJECTION. Quite a different, though very important, type of concealment, is known as projection. In this case a person conceals a desire by projecting it on to others. To quote Hart, in his *Psychology of Insanity*: "Thus the parvenu, who is secretly conscious of his own social deficiencies, talks much of "bounders" and "outsiders" whom he observes around him, while the one thing which the muddle-headed man cannot tolerate is "a lack of clear thinking in other people." An illustration from Frink's *Morbid Fears and Compulsions* is that of an attractive young widow, who wished to move from a small town, claiming to be annoyed by the gossip that she was a "designing widow." There was really no substantial evidence of gossip, but, upon analysis it was shown that unconsciously she did wish to remarry, but would not so soon admit the desire to consciousness, and the repressed wish expressed itself as a projection on to others. The reason of her peculiar disguise was this: the desire to remarry would have produced a conflict with her social code. To permit this secret wish conscious outlet would have resulted in abuse of herself, because of the social code. To spare herself this pain of conflict, she projected the desire on to the small town populace, where she could rebuke it, and at the same time spare herself the pain of her own mental conflict. Much of the phenomena of paranoia and insanity, involving delusions of persecution, have this specific etiology.

COMPENSATION. The analysis of the disguise known as compensation has been developed particularly by Adler in his book, *The Neurotic Constitution*. The idea is that a defect or weakness is compensated for by the development of another organ or trait, thus a leaky heart valve is partly compensated for by the strengthening of the heart muscle. It is observed that our emotions seem to occur in pairs, love and hate, fear and anger, humility and arrogance. An unusual desire of one of these pairs may be obscured by an exaggeration of the opposite, a sort of imaginary compensation for its absence. Thus we are sometimes unusually polite and courteous to persons we do not like, and our real motive is disguised. The absence of a friendly feeling will be compensated for by an exaggeration of courtesy. A very common form of compensation frequently seen in clinics among neurotics is an exaggerated concern for the health of a particular person, which serves to cover up a secret and, perhaps, unconscious wish of a contrary nature. A very good man, professing a religion of humility, will sometimes compensate for a repressed ego by a developed intolerance and arrogance in the name of goodness.

RATIONALIZATION. Perhaps the most widely used disguise among normal persons is that of giving a fictitious, but plausible, explanation for conduct, instead of giving the true reason or motive, a device called rationalization. It is as though we do what we want to do, and afterward give a reason that is plausible to the opinions of others, as well as to the censor. And it is surprising how often we are ignorant of the true motive. Thus a man claimed to have voted for President Wilson because of the President's exceptional ability, but analysis showed the real reason to be the fact that the man was really unconsciously cowardly, and felt that Wilson had kept us out of war. A man will go fishing on Sunday because he wants to, but gives as his reason the fact that it is good for his health. Perhaps the most ingenious of all rationalizations are those of sufferers from persecutory delusions. I knew a tailor once, who thought enemies were going to do him harm. A bystander waiting in front of his shop was planning to burn his shop. A very generous customer would be spying. It was impossible to convince such a person by argument. The real reason of his fear was inward and unknown to him, and not the behaviour of the bystander or the customer. Rationalizations are as

prevalent, though on a different scale, among normal persons as among paranoiacs. There are other disguises, such as *transference*, *identification*, and various distortion devices; but as they are seldom, if ever, found in disguising the economic motives of history, I shall not illustrate them. It is hoped that the foregoing list of mental mechanisms will have shown the really remarkable and astounding feats which the mind will perform to disguise motives, and that the presentation will give some hint of their great prevalence in human behaviour. It is the scientific determination of these various disguises which is the great contribution of psycho-analysis for the theory of the economic motivation of history. For if the human mind so lavishly disguises our various motives, the theory that economic motives of history are disguised does not appear so incredible. Economists have claimed that sugar partly caused the Spanish American war, and Boudin has claimed the selling of textiles made the peace epoch of the Gladstone era, while the selling of iron brought the warlike spirit of the present day. Whether these particular illustrations be true or not, they may not seem so incredible when we recall that a love motive finds an outlet in an obsession to examine the numbers on bank notes, and that a childish sexual curiosity finds an outlet in scientific research.

Turning now to the analysis of the economic side of the paper, it is claimed that the economic causes of history are in large part unrecognized, which means that they are at least partially disguised. Before considering the particular disguises affected, it is desirable to analyze what the economic motives are and why they are disguised. The economic motive is essentially selfish. Selfishness, of course, finds many other modes of expression than the economic. The analysis of this paper does not imply, however, that all economic motives are selfish, nor that every selfish economic motive is against the common welfare. Nor does the validity of the thesis depend on what particular percentage of selfish motive is readily seen when we observe that we are loath to admit a selfish motive but are proud to display an altruistic or a righteous one. The reason for this difference in attitude between so-called altruistic and selfish motives arises from the fact that a certain amount of subordination of self must be made for the common good. There seems to be thus a conflict between immediate selfish interests and common welfare. The selfish tendencies are kept in bounds by what Ross

and Giddings call social control, by what Trotter calls the herd instinct, and by what Sumner calls the mores. We can all see that if each individual pursued self-centeredly and short-sightedly his own selfish impulses, group survival would be impossible. As to how and why this is so, we owe much to the researches of social psychology within the past decade. In society, therefore, there is a conflict between collective selfishness and group welfare. This social control or mores or gregarious instinct acts as a sort of censor, and represses a good many selfish tendencies, and elicits praise for altruistic ones. Motives of collective selfishness are in a way repressed into the unconscious state. That is, we do not openly admit them, and the censorship is so great at times that we actually forget them. But because we refuse to recognize them or forget them is not proof that they may not exist. Certainly some of them live on and function in collective movements through disguises. In other words, the same mechanisms of conflict, censor, and disguise operate in the repression and escape of collective selfishness as were discovered by psycho-analysis to be so prevalent in sexual behaviour. The above reasoning sounds dangerously like reasoning by analogy, and suggests some of those ill-fated attempts of earlier days to apply the mechanism of physics to sociology. But I do not think that this is reasoning by analogy. In fact, I am attempting to show how two kinds of phenomena are based upon the same fundamental psychological mechanism.

It should also be noted here that there is nothing mystical in the working of these mechanisms collectively. No special entity, as the social mind, with special mental laws is implied. The way these mechanisms of individual persons work out collectively is somewhat as follows. In a particular population of say a million, there will perhaps be only several thousand who are selfishly and economically interested in a movement. These thousands being in positions of influence will be able perhaps to prepare "copy," so to speak, for the population, and large numbers who are not acutely affected one way or another accept the prepared opinions. Trotter has shown that there is very much more accepting of prepared opinions by us than the most sophisticated of us suspect. And of these thousands who are economically interested perhaps only a small percentage, say ten or twenty per cent or less, are clearly conscious of the true nature of their selfish desires. Perhaps eighty or ninety per cent or more, depending of course on the particular occasion

or the nature of the movement, will partially or completely disguise the economic motive by some of the processes outlined. These disguised motives will be much more readily accepted by hundreds of thousands of citizens not acutely affected. And thus we have the collective phenomena occasioned by the operation of individual mechanism.

THE PSYCHOLOGICAL EXPLANATION OF MEN'S PECULIARITIES¹

1 The present condition of industrial unrest has been widely attributed to the recent war. When the life of a nation is at stake, overstrain is to some extent inevitable; and when "peace" has been signed, the effects of such overstrain cannot fail to manifest themselves. The writer is himself acquainted with the managing director of a factory who, with his work's manager, burst into tears when the latter came to him with the news of the armistice. The editor of an important London newspaper complained that his assistants were breaking down one after the other when the strain of warfare was at an end, and were so sensitive that even the mildest rebuke provoked an outburst of emotion. We have ample evidence, from official inquiries, that during the war, the factory workers complained of feeling "stale," "nervy," "done up," "fairly whacked," especially during the earlier years when excessively long hours, the Sunday labor and a large amount of overtime, were so widely adopted. It is now realised that those conditions of work were economically unsound, and that a far greater output would have been—and indeed in the later years of the war—secured by the proper regulation of working hours, the dangers of over-strain being correspondingly lessened.

3 1 Thus unrest arises not so much from merely physical overstrain as from the effect of worries and mental conflicts of all kinds, e.g., the unsatisfactory conditions of modern industrial employment and its failure to satisfy the natural instincts and emotions which have consequently to be suppressed. Home troubles, dating often from early childhood, become frequent sources of worry. Such worries produce their effect especially

¹ Charles S. Myers. *Mind and Work*. p. 137-49. G. P. Putnam's Sons. New York and London. 1921.

when sown on a favourable soil. This soil has been called the "psychopathic disposition"—an innate tendency to mental instability, sensitivity and discontentment, and to erratic mental development.

—However provoked, such mental instability provokes industrial unrest, not only general but also individual. The mentally unstable employee is an irritant to his fellows, and a nuisance to the management. His kind is responsible for much of the existing unemployment and labor turnover. Ever restless himself, he is continually being discharged from one job to another as a worthless worker. He becomes more and more unfitted for a normal environment, and finally joins the ranks of the unemployable, the alcoholic, the criminal or the insane.

We now know that, by the timely application of psychotherapeutic measures (based on the recent developments of abnormal psychology) and by a judicious selection of environment, such workers can, like early tuberculosis patients, be prevented from going downhill; many of the emotionally unstable can be healed; and many of those with insane "egocentric" tendencies or with defective intelligence can be prevented from becoming a danger to themselves or to society.

It would be absurd, then, to attribute the present industrial unrest merely to the strain of warfare. Such unrest existed, though by many unrecognized, long before the war. It was becoming more intense during the period immediately preceding the war. Employers and employees had, by then, become definitely solidified into separate groups, each imbued with what has been termed its own "herd spirit," each developing purposely or instinctively its own defences, each resolved to defend its own position and to demolish that of the other "herd."

The weapons of defense and attack used in such industrial warfare may be well seen in a comparison of the standpoints of the extremists on the two sides today. The extremist employer, refusing to "face the facts" of modern industrial conditions, insists on keeping labor "in its proper place." He claims the right to deal as he pleases with the men whom he employs. He resents interference from outside sources. He denies any responsibility for the welfare of his workers; their duty being to work, his to pay them wages. If he has been "through the mill" himself, he argues that, "what was good enough for me when I was a lad is good enough for you now." He objects to

any improvements in education or other social conditions on the ground that they make the worker more discontented with his lot. He regards labor as inevitable drudgery, and as a commodity purchasable according to the strict laws of supply and demand. His aim is frankly to "score off" it whenever possible, and to break up the trade unions which oppose his unfettered progress at every step. "Let others rise as he has risen" is his motto—and the "devil take the hindmost." He looks upon the trade unions as hostile associations bent on getting for their members as high wages for as little work as possible and robbing him of what he considers the just fruits of his enterprise. He argues that if the workers pursue their present policy of restriction in output, he has the same right to restrict their pay and their control over industry. He may long ago have achieved the ideal for which he set out—of making a fortune; his continuance as an employer now being due to an unquenchable thirst for industrial adventure, greater power and fresh conquests.

The extremist employee, armed with "defense mechanisms" against his feelings of inferiority or self-respect, smarting under injustice, imagined or actual, presents a similarly "impossible" attitude. Why, he asks, should I increase my power of production, if so large a share in the resulting profits goes to the capitalist? Why is it necessary for the capitalist to reap enormous interest on his capital without serious risk, if he is willing to lend money to the state at the rate of five per cent? Why should I be in favor of motion study, if it is going to force me into a monotonous routine method of work and to transfer all my craft knowledge and skill from my possession to the department of management? What is the use of talking to me of vocational selection, until my "unfit" comrades are secured from unemployment, and until true vocations have been established throughout the world of labor? Does the textile industry, for example, offer a properly organized vocational system, when fifty per cent of the boys who enter it are said to leave it before they reach the age of twenty-two? Do you call the work of a postman or a porter a vocation? What chances are offered in such occupations for escape from a soulless life of unrelieved monotony? Are high productivity, good wages and short hours the ultimate objects of human existence, or should not the worker aim at a fuller, more interesting and intellectual

life, and in the exercise of the higher duties of citizenship? Is it inevitable that rulers and ruled should continue to exist as two distinct and opposing classes, and that the former should be in a position to skim off from the latter all the cream of leadership and ability in the schools, factories or businesses, for admission into their own class and for desertion from the ranks into which they were born? As a worker, I demand an adequate share in the control of the work in which I am engaged, just as I have a vote in the government of my country. I refuse to remain a mere "hand"; I want to use my brain. Only then am I prepared to consider the application of scientific organization and management. Before this can be done, the whole social fabric needs reconstruction.

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